

CONTINGENCY PLAN

ATTACHMENT 4

SECTION 4.0

Pueblo Chemical Depot

Pueblo, Colorado

CONTINGENCY PLAN

[6 CCR 1007-3 § 100.41(a)(7) and § 264.50 through 264.56]

4.0 INTRODUCTION

This Contingency Plan describes the response actions to be taken to minimize hazards to human health and the environment from fires, explosions, and any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, surface or ground water at the Pueblo Chemical Depot (PCD) as required by the Colorado Hazardous Waste Regulations, 6 Colorado Code of Regulations (CCR) 1007-3 § 100.41(a)(7) and § 264 Subpart D. The provisions described in this Plan are carried out immediately by PCD site personnel whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment.

Upon effective containment of any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents, the Permittee must obtain an Emergency Permit from CDPHE before proceeding with any cleanup or other recovery operations. As stated in 6 CCR 1007-3 § 100.10(a)(8), "...After the immediate response activities are completed, any treatment, storage, or disposal of discharged material or discharge residue or debris that is undertaken must be covered by a RCRA permit, an emergency RCRA permit or interim status." Further, § 264.1(g)(8)(iii) states "Any person who...continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of this part."

The specific actions taken by PCD personnel in the event of a routine leak from munitions stored in the Resource Conservation and Recovery Act (RCRA)-permitted hazardous waste management units (G203, G1009, G1107, G1109, and G1110) are described in **Attachment 2** of this Permit. PCD responses are dependent upon evaluation of specific circumstances and the unique events for each situation.

PCD utilizes the Installation Spill Contingency Plan (ISCP) and the Chemical Accident/Incident Response and Assistance (CAIRA) Plan under this Contingency Plan to control the release of hazardous waste or hazardous constituents at the facility. The ISCP is attached as **Appendix A** to this Contingency Plan and details the actions that take place if a nonagent-related spill or release occurs. The Chemical Accident/Incident Response and Assistance (CAIRA) Plan discusses what actions take place if an agent-related spill or release occurs.

The ISCP identifies resources, equipment, personnel, and procedures to be used to prevent oil or nonagent-related hazardous material/waste spills from reaching surface and subsurface water. This plan is also designed to minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or gradual release of oil or nonagent-related hazardous material/waste to air, soil, or surface water, and is carried out whenever any of these incidents occur. The ISCP provides the following:

- Identification of the On-Scene Coordinator (OSC), On-Scene Incident Commander (OSIC), the Installation Response Team (IRT), and their responsibilities for implementing the plan
- A discussion of the roles of various other PCD personnel such as the Chief of Environmental Management
- A discussion of the implementation of the ISCP, including actions to be taken during an oil or nonagent-related hazardous material/waste spill.

This Contingency Plan will be reviewed and amended in the event of any of the following:

- The RCRA Permit is revised.
- A response action fails in a test or actual emergency.
- Changes occur in the design, construction, operation, maintenance, or other areas of PCD site operation in a way that increases the potential for fires, explosions, or releases of hazardous waste/materials or hazardous constituents, or changes the response necessary in an emergency.

A copy of this Contingency Plan is maintained at the facility.

4.1 GENERAL INFORMATION [6 CCR 1007-3 § 264.52]

PCD is located in southeastern Colorado, east of the city of Pueblo in Pueblo County. PCD is located on 23,000 acres and has been in operation since the early 1940s. Activities at PCD have included storage and shipment of general supplies; storage of conventional and chemical munitions; reconditioning of vehicles; renovation and demilitarization of ammunition; fifth echelon maintenance; storage, supply, and maintenance of fixed and floating engineer bridges; repair, maintenance, and manufacturing of guided missiles; repository for historical properties; and metal processing. In 1988, the Defense Secretary's Report on Base Realignment and Closure (BRAC) recommended the realignment of PCD. Since this action, the number of activities conducted at PCD has been significantly reduced. **Figure B-1-2** in the Facility Description, **Attachment 1** to this Permit, provides a site plan map of PCD. Hazardous waste activities performed at PCD are described in Process Information, **Attachment 7** of this Permit.

4.2 EMERGENCY COORDINATORS [6 CCR 1007-3 § 264.52(d) and 264.55]

This section describes the emergency response organization and designated personnel at PCD. Directorates provide personnel, equipment, and expertise for proper response to spills of oil or nonagent-related hazardous material/waste.

For any chemical agent or hazardous waste/hazardous material spill or release at PCD, the PCD Operations Center (OC) is notified. For chemical agent releases, the OC notifies depot personnel to report to their CAIRA duty stations. For hazardous waste material spills or releases, the OC notifies the Crisis Management Team to report to the OC. The Depot Commander is the OSC and the primary emergency coordinator at PCD. In the event the commander cannot reach the facility within 30 minutes, other qualified personnel at PCD may act as the OSC/emergency coordinator until relieved. A list of the PCD personnel including the commander whom may act as the emergency coordinator during an emergency, their address and phone number will be provided by PCD to CDPHE in accordance with the compliance schedule condition I.J. of this Permit and will be attached as Table 4-1a to this Contingency Plan. The OSC is thoroughly familiar with all aspects of the Contingency Plan, all operations at the facility, the location and characteristics of the waste handled, the location of all records within the facility, and the facility layout. The OSC coordinates all emergency response measures and has the authority to commit resources needed to manage emergency situations and cleanup spills or other releases.

Table 4-1¹ lists key positions and phone numbers of identified positions. Army Regulation (AR 525-27) outlines the qualifications for all personnel holding emergency management positions on an Army installation.

A detailed description of the PCD emergency response organization and designated personnel for a spill or release of agent-related hazardous waste is provided in the PCD CAIRA Plan.

If a release to surface waters occurs, the U.S. Environmental Protection Agency (USEPA) will provide an OSC responsible for the emergency response operation. The EPA OSC must be notified immediately if it is determined that there is a release to surface waters.

4.3 IMPLEMENTATION [6 CCR 1007-3 § 264.52(a) and 264.56(d)]

The provisions of this section are carried out immediately by PCD site personnel whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment.

The PCD CAIRA Plan and/or PCD ISCP are implemented when a fire, explosion, or release of chemical agent or hazardous waste/hazardous material occurs. Incidental releases that are contained within engineering controls are managed as a part of routine operations. Control procedures for responding to spills and releases are described in Section 4.4.4 of the Plan.

4.3.0 Response

At all times, there must be at least one employee at the installation that can act as the OSIC. The OSIC is responsible for coordinating all nonagent-related emergency response measures. The OSIC must be thoroughly familiar with all aspects of the Contingency Plan, which includes the ISCP, as well as all operations and activities at the installation, the location and characteristics of wastes handled, the location of pertinent records at the installation, and the installation layout. Only the OSC or his designated representative has the authority to commit the resources needed to carry out the ISCP.

¹ All tables are located at the end of this section.

4.3.1 Initial Report

Anyone may report a spill or release. All personnel or employees of PCD are required by AR 200-1 to immediately report any observed oil, hazardous material/waste, or pesticide spill. Spill or release events are to be reported to the OC and the Fire and Emergency Services Department using the emergency contact number 4911. The emergency contact number notifies both the OC and the Fire and Emergency Services Department simultaneously. The discoverer will not endanger their personal safety to control the spill or release.

Personnel from both the OC and the Fire and Emergency Services Department are supplied with worksheets to record the initial reports of an oil or hazardous material/waste spill or release. The completed original is then turned over to the OSC for the record.

4.3.2 Immediate Action

After the discovery of a nonagent-related spill or release, the OC is notified immediately. Refer to **Table 4-1** for the OC phone number. The OSIC is responsible for implementing the ISCP. In the absence of the appointed OSIC, the Chief or the On-Duty Chief of the Fire and Emergency Services Department serves as the OSIC.

The OSIC has the responsibility to:

- Activate internal facility alarms or communication to notify all facility personnel in affected or impacted area
- Deploy the first-phase Incident Response Team (IRT).
- Determine the magnitude of the spill and provide status of situation to the OC.
- Seek immediate medical attention for those individuals involved in the spill.
- Provide sufficient information so that the Crisis Management Team can make necessary notifications to the Directorate of Emergency Services, the Directorate of Public Works, the Pest Management Officer, the Safety Office, the Public Affairs Office, the U.S. Army

Chemical Materials Activity (CMA) Environmental Office and CMA Legal Counsel office.

- Arrange for contracts with offsite disposal facilities and cleanup contractors.
- Determine the quantity of material released and determine whether a reportable quantity of oil (25 gallons or more) or hazardous material/waste (refer to Appendix B of the ISCP, attached to this Plan as **Appendix A**) was released to the environment.
- Provide sufficient information so that notifications can be made to the Colorado Department of Public Health and Environment (CDPHE) and the USEPA.
- Provide sufficient information so that the Crisis Management Team can complete and submit the Pollution Incident Report and the appropriate follow-up report within 15 calendar days to CDPHE and USEPA if a reportable quantity is equaled or exceeded or a release to surface water has occurred.

When a pesticide spill occurs, the following actions are taken, in addition to those listed previously:

- Identify the pesticide, herbicide, or rodenticide container to identify the poison category in order to determine personnel exposure and emergency response.
- Refer to the Safety Data Sheet (SDS) for that substance to determine the appropriate hazard and spill response information (the OSIC and Fire and Emergency Services Department have a copy of the SDS for any pesticide being used at PCD).
- Notify the PCD Occupational Health Clinic and provide the pesticide name and poison category.
- Contact the Pest Management Officer to provide expertise to aid in the response.
- Remove contaminated clothing and decontaminate affected areas using methods identified on the SDS for that hazardous material/waste.

4.3.3 Actions to Be Taken During a Release at RCRA-Permitted Hazardous Waste Management Units G203, G1009, G1107, G1109, and G1110

Response action to all accidents/incidents involving chemical munitions is carried out as identified in the CAIRA Plan. The RCRA-permitted hazardous waste management units G203, G1009, G1107, G1109, and G1110 are located within Munitions Storage Area A. Situations involving the release or spill of chemical agent are handled under the CAIRA Plan. The PCD Installation Commander is the Federal On-Scene Coordinator in the event of a chemical agent-related accident/incident.

4.4 EMERGENCY ACTIONS [6 CCR 1007-3 § 264.56]

The emergency procedures presented in the following paragraphs are followed by PCD site personnel. Once notification of an emergency is made which implements the PCD CAIRA Plan and/or the PCD ISCP (as applicable) and all facility personnel have been notified accordingly, procedures presented in those plans are followed in accordance with this Contingency Plan. The following paragraphs describe PCD's procedures during an emergency.

Whenever there is an imminent or actual emergency situation involving hazardous material/waste at PCD, the OC, the OSC, and the Crisis Management Team take the following actions as soon as possible:

- Implement the ISCP

Notify appropriate state or local agencies with designated response roles if their help is needed. The PCD ISCP describes the process PCD employs for emergency situations and notifying appropriate state or local agencies with designated response roles.

Identify the character, exact source, amount, and extent of any released materials whenever there is a release, fire, or explosion. Identification may be accomplished by observation or review of facility records or manifests and, if necessary, by chemical analysis. PCD personnel, including chemical crewmembers, toxic material handlers, and security personnel, identify visual indicators of an event, and such indicators immediately indicate presence of liquid agent or an explosion or fire. The PCD personnel identifying an event verbally notify the OC. As part of the daily operations of the OC, all data

related to potential releases is reviewed on a daily basis. If data shows a possible Chemical Accident/Incident, the CAIRA Plan is immediately initiated.

- Assess possible hazards to human health or the environment that may result from the release, fire, or explosion in coordination with appropriate state, federal, and local authorities. This assessment must consider the maximum potential quantity of hazardous waste or hazardous constituents involved, and both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemicals used to control fire and heat induced explosions). Webpuff air modeling as described below is used to predict concentrations of agent at potentially impacted locations. Real-Time Analytical Platforms (RTAPs) are used to detect agent for a single source. Airborne exposure limit (AEL) concentrations are evaluated to address risks to the PCD work force and responders. PCD uses both acute exposure guideline levels (AEGs) and AEL concentrations to assess hazard areas for both on-post and off-post communities. AEGs are used to evaluate hazard areas for off-post communities and AEL concentrations are used to direct on-post emergency response actions. Standards for AEL concentrations are short-term exposure limits (STELs). PCD personnel don masks when levels reach one-quarter STEL.

Identify locations for monitoring using the WebPuff™ hazard modeling program. This information is used to coordinate with the operation sections chief who assists with determinations of low-level monitoring. The OC, as part of daily operations described in the PCD CAIRA Plan, reviews all pertinent data on a daily basis, including information to predict areas of agent migration, using WebPuff. On operating days, PCD runs a maximum credible event model, which is the most probable accident based on the type of operations occurring on a particular day as well as the agent and munitions involved. If the data show a possible Chemical Accident/Incident, the CAIRA operation is initiated immediately. WebPuff, an open source automated emergency management decision support system, models a chemical release using the latest Geographic Information System (GIS) technology, assesses its risk to PCD's surrounding communities, and delivers protective action recommendations to PCD Emergency Operations Center (EOC) within 5 to 10 minutes. With WebPuff, PCD EOC hazard analysts assess the potential off-post effects of a chemical incident at PCD. The information is then sent

electronically to the neighboring county emergency management agencies (Pueblo County Government, Pueblo City Government, Boone City Government, and Health and Medical officials as outlined in the PCD CAIRA Plan, PCD Chemical Accident/Incident Recovery Plan, Annex E, attached to this Contingency Plan as **Appendix B**). The counties receive plume projections of the chemical release and a community-specific emergency protective action recommendation. The PCD Commander and county emergency management officials evaluate the WebPuff analysis and recommendations and then make protective action decisions for their communities. Using real-time weather information, technical information about the agent being modeled, and local terrain data, the system predicts the projected path of the chemical plume. WebPuff uses open source GIS technology to provide images of the projected plume and its relationship to the local terrain. The WebPuff system is written in Java and runs on a UNIX platform to provide a Web-based geospatial portal utilizing GIS technologies such as MapBuilder, GeoServer, GeoTools, and an open source PostGIS Spatial Database. It also implements Open GIS Consortium, Inc., Web Features Service, and Web Map Service implementation specifications that allow not only static display of population, critical infrastructure, and special facilities, but also dynamic chemical plume mapping, projection, and the ability to develop high-resolution aerial imagery. WebPuff relies on 15-minute weather feeds from weather towers. Once an incident is identified, the WebPuff system will continue to build the model of the hazard area or plume based on continuing weather conditions.

If the OSIC determines that the facility has had a release, fire, or explosion that could threaten human health or the environment outside the facility according to the criteria below, the OSIC must report those findings as follows:

- The Depot OC immediately notifies the Pueblo County EOC if the initial assessment indicates that evacuation of local areas may be advisable. The OSIC, in conjunction with the OC, determines the downwind hazard analysis and help Pueblo County Emergency Managers decide whether local areas should be evacuated. Based on the WebPuff modeling, if any AEGL-1 is achieved for agent, a community emergency level is reached; if any AEGL-2 is established, a recommendation to evacuate or shelter-in-place is appropriate. AEGL values for mustard agent are contained in **Appendix C** to this Contingency Plan.

- On-post response recommendations are made to the PCD Commander, and the off-post recommendations are made to the Pueblo County Emergency Managers.
- The primary means of identification is the telephone Hotline to the Pueblo County Emergency Dispatch, which is a direct, immediate line to Pueblo County.
- The Environmental Representative in the OC notifies the National Response Center (NRC) either on-line or at (800) 424-8802. The report must include:
 - Name and telephone number of person making notification
 - Name and address of facility
 - Time and type of incident (e.g., spill, fire, explosion)
 - Name and quantity of material involved, if known
 - The extent of injuries, if any
 - The possible hazards to human health or the environment outside the facility
 - An estimated quantity and disposition of recovered material that resulted from the accident/incident.
- Based on hazard indicators developed by WebPuff, monitoring teams are mobilized. The WebPuff risk takes into account uncertainty and the WebPuff isopleth is the most probable indicator of where a plume is located based on indicators. Monitoring RTAPs are then set up to monitor certain areas. RTAPs are also used at Personnel Decontamination Station (PDS) “hot” lines, at the clinic, and at the decontamination shower at the clinic. RTAPs verify the non-presence of agent outside the risk envelope.

During an emergency, the OSC and the Crisis Management Team must take all measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste storage areas within

the installation. Measures must include stopping processes and operations, collecting and containing released materials, and removing or isolating containers.

Sampling is accomplished by collection of an air sample at approximately the same sampling point as the near real-time (NRT) monitor or historical sampling location. Confirmation monitoring is used for informational, qualitative, and/or quantification data reporting purposes in the event of a chemical material release. The confirmation sample is analyzed by a different method (column, detector, or different type of instrument) than the NRT or historical method to minimize the likelihood of detecting interferences.

Immediately after an emergency, the OSC and Environmental Management Office (EMO) must provide treatment, storage, or disposal of recovered waste, contaminated soil, contaminated surface water, or any other material that results from the spill, release, fire, or explosion at the installation.

The OSC and the Crisis Management Team must ensure that, in the affected area(s) of the installation:

- No waste that may be incompatible with the released material is treated or stored until cleanup procedures are completed
- All emergency equipment is assessed for serviceability. Disposed equipment is replaced. Decontaminated equipment is inspected before being returned to its proper storage location.
- The Crisis Management Team must notify the appropriate state and local authorities that the installation is in compliance with these decontamination requirements before normal operations are to resume in the affected area(s) of the installation.

Upon effective containment of any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents, the Permittee must obtain an Emergency Permit from CDPHE before proceeding with any cleanup or other recovery operations, in accordance with 6 CCR 1007-3 § 100.10(a)(8) and § 264.1(g)(8)(iii).

Operations Center (OC)

The OC is utilized whenever there is an imminent emergency situation. Upon arrival at the spill or release location, the OSIC assesses the severity of the accident/incident and provides a situation status to the OC. The designated Operations Officer directs activation of the Crisis Management Team and immediately implements procedures to recall essential personnel.

4.4.0 Notification [6 CCR 1007-3 § 264.56(a) and (d)]

The OSIC must note in the Operating Record the time, date, and details of any accident/incident requiring implementation of the Contingency Plan (i.e., a spill/release of a hazardous material/waste equal to or greater than the reportable quantity or if a release of mustard agent has occurred outside engineering controls). The Crisis Management Team must contact CDPHE within 24 hours of the time the Contingency Plan, including ISCP was implemented. Within 15 calendar days after the incident is closed, PCD must submit a written report to CDPHE Hazardous Materials and Waste Management Division. The written report is hand carried or sent by certified mail or an overnight delivery service.

The following information will be included in the report submitted to CDPHE:

- The name, address, and telephone number of the OSC
- The name, address, and telephone number of the facility
- The date, time, and type of accident/incident (e.g., spill, fire, explosion)
- The name and quantity of material(s) involved
- The extent of injuries, if any
- An assessment of actual or potential hazards to human health or the environment.
- An estimated quantity and disposition of recovered material that resulted from the accident/incident.

4.4.1 Identification of Hazardous Wastes/Materials [6 CCR 1007-3 § 264.56(b)]

The emergency responders identify the character, exact source, amount, and extent of any release of hazardous waste or materials by visual inspection, by reviewing facility records and documentation, and by using their general knowledge of site operations and storage. The exact source of a hazardous waste or material release is initially identified by the discoverer and later confirmed by the OSIC. The discoverer of a potential chemical agent release will make the incident known through use of horns, verbal notification of “Gas! Gas! Gas!”, or banging metal items to call attention to the incident. After any indication of a chemical accident, all PCD personnel will don protective masks.

Any release of an unknown material is not anticipated. However, if a released material cannot be readily identified, samples may be collected for analysis. In the event that material cannot be identified by analysis, a “worst-case” situation is assumed and commensurate response procedures are initiated.

4.4.2 Hazard Assessment [6 CCR 1007-3 § 264.56(c)]

An assessment on possible hazards to human health and the environment is conducted as part of the planning process required to conduct the emergency response.

The OSIC, in coordination with appropriate state, federal, and local authorities, must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion. To assist the OSIC in assessing the hazards, the following information is considered:

- Whether the nature of the hazard is known, unknown, or can be reasonably assumed
- The degree of toxicity of the material
- The presence and effect of any toxic, irritating, or asphyxiating gases that may be present as a result of controlling a fire
- Containment of a spill or lack of containment

- Uncertainty as to the effects of any migration of wastes or water used in fire control to either groundwaters or surface waters
- The ability of response teams to contain the emergency.

4.4.3 Notification Procedures [6 CCR 1007-3 § 264.56(d)]

If the OSC or designee determines, based on the assessment, that the incident could threaten human health or the environment outside PCD, he or she directs the Crisis Management Team to notify the NRC and the appropriate local/state agencies. The OSIC provides the following:

- Name and telephone number of the Emergency Coordinator/PCD OC
- Name and address of facility
- Time and type of incident (e.g., release, fire)
- Names and quantity of material(s) involved, to the extent known
- The extent of injuries, if any
- The possible hazards to human health or the environment, outside PCD
- An estimated quantity and disposition of recovered material that resulted from the accident/incident.

The PCD OC contacts the Pueblo County EOC and provides the appropriate information.

4.4.4 Control Procedures [6 CCR 1007-3 § 264.52(a)]

The responses and control procedures described in this section are initiated in the event of an incident involving chemical agent or hazardous waste/hazardous materials at PCD involving fire, explosion, spill, or vapor release of chemical agent or other hazardous materials that pose a possible threat to human health and the environment. Also included are procedures followed in response to incidental spills or releases. Regardless of situation, initial response will assume the highest level of PPE.

4.4.4.0 *Incidents Involving Fire or Explosion*

The PCD CAIRA Plan or PCD ISCP is implemented immediately if there is a fire or explosion that causes a release of toxic chemical agent or hazardous material.

The OSIC or designee immediately assesses all fires/explosions to determine the following information: material(s) involved; exact source of release; quantity of release; release classification: (1) release to the environment or (2) release contained, extent of any materials released to the environment, and extent of injuries.

4.4.4.1 *Procedures to Respond to Potential Explosion*

If a chemical incident involving a potential explosive release from an explosively-configured munition occurs, all personnel are removed from the area and an exclusion zone and a hot line are established. PCD then requests U.S. Army Explosive Ordnance Disposal (EOD) support. An EOD unit will be sent to PCD, and PCD personnel will provide an initial briefing on the incident. The EOD Unit will conduct the initial assessment and inform PCD when the site is safe for follow-on PCD crews to work.

4.4.4.2 *Procedures to Respond to Incidental Spills and Releases*

The following actions are taken in the event of incidental spills or releases:

1. Wear appropriate protective clothing per the direction of Site Safety and Health Officer. PPE selection is determined by evaluating indicators of agent present, such as AEGL or concentration footprint, and associated risk envelope for personnel protection. For a suspected release of chemical agent, a hot line is established outside of the risk envelope, as based on current projected downwind hazards and weather changes. Any personnel responding to a spill or release on the “hot side” of the hot line will wear Occupational Safety and Health Administration (OSHA) Level A or B PPE. Personnel on the “cold side” of the hot line will wear various levels of PPE, including OSHA Level C and D. For response to a known chemical agent release, response personnel will wear OSHA Level A PPE. The Incident Commander will evaluate the spill or release and adjust PPE levels as needed.
2. Contain the spill in the smallest area possible using absorbent socks, berms, or other means.

3. Repair or plug the leak, if possible.
4. Decontaminate the release area in accordance with **Appendix D** to this Contingency Plan. On the hot side of a spill or release, high test hypochlorite (HTH) bleach is used to decontaminate the area. Personnel in OSHA Level A or B walk toward the spill or release area, spraying HTH in the direction of the spill.
5. For container spills, place container in overpack or remove container contents, if necessary, using a portable pump, and transfer material to a new container. If the material was released to secondary containment (for contents released from a container), released material either is pumped out of the containment area using a portable pump or absorbed using compatible absorbent materials such as pillows, socks, or granules.
6. Decontaminate equipment and clothing in accordance with **Appendix E** to this Contingency Plan.
7. Manage spent chemical agent decontamination solutions and other waste decontamination solutions as hazardous waste.
8. Place absorbed or pumped material into United Nations (UN) rated containers, label appropriately, and store in a less than 90-day storage area pending shipment to a permitted treatment, storage, and disposal facility.

4.4.5 Prevention of Recurrence or Spread of Fires, Explosions, or Releases [6 CCR 1007-3 § 264.56(e) and (f)]

During an emergency, the OSC and the Crisis Management Team must take all measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous materials or wastes at the installation. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

If a facility on the installation stops operations in response to a fire, explosion, or release, the OSC and the Crisis Management Team must ensure that all valves or pipes and other related, affected equipment are monitored for potential leaks, pressure build-up, gas generation, and ruptures.

Some overpacked munitions in the RCRA-permitted hazardous waste management units G1009, G1107, and G1109 contain explosives (bursting, propellant, and fuzes). Detonation of an explosively configured munition presents not only a hazard to personnel and property from the blast effects, but also a hazard from the spread of chemical agent. Requirements for safely handling, transporting, and storing ammunition and explosives are described in the following regulations and standards:

- 6 CCR 1007-3, Section 264.17
- Federal Register, 53 FR, 8504-8507
- Army Materiel Command Regulation (AMCR) 385-100, Safety Manual
- Standard Practice for System Safety, MIL-STD-882E
- Department of Defense Explosives Safety Board (DDESB), DoD Ammunition and Explosive Safety Standards, DoD 6055.9-STD
- DA Pam 385-64 for explosives
- DA Pam 385-61.

An explosion represents a fire hazard. The OSIC and the Fire and Emergency Services Department respond to fires or explosions occurring in the PCD hazardous waste storage units, unless fire/explosion is beyond the capabilities of these two units. For nonagent-related fires only, the OSIC calls the mutual aid support agency directly. In accordance with AMCR 385-100, if a fire involves explosive materials or is supplying heat to explosives, or if the fire is so large that it cannot be extinguished with the equipment at hand, the personnel involved shall evacuate and seek safety. All fire response personnel are provided with appropriate protective clothing and safety equipment. Care is taken to contain and recover any runoff of waste, water, foams, or chemicals applied to the fire. If possible, the area is bermed and/or any runoff drains blocked prior to applying liquids to the fire. Once extinguished, the materials involved in the fire and surrounding area are decontaminated (if necessary), recovered, and placed in containers for proper disposal.

In the event of a fire, the major effort is focused on preventing the fire from spreading to nearby areas. The following actions are taken for indoor areas affected by a fire or explosion.

- Personnel close fire doors in buildings.
- Work in all areas is terminated immediately.
- The Fire and Emergency Services Department and the OC are contacted.
- All personnel not actively involved in fighting the fire clear the area. Non-emergency personnel report to the designated assembly point for a head count.
- All injured persons are removed and qualified personnel administer medical treatment.

If the Fire and Emergency Services Department decides that the chances of an explosion are high, the entire area within a 2,000-foot radius of the source is evacuated. All personnel are trained in evacuation procedures and means of exit from their respective work areas (see Section 4-7).

Until evacuation is signaled, personnel who are not in an affected area stay in their respective work areas. Visitors are cleared from the area and instructed to report to a designated assembly point. The Fire and Emergency Services Department is responsible for all fire-fighting efforts until help from outside sources arrives. Supervisors of unaffected areas stay with their personnel and are ready to evacuate and account for the persons under their supervision.

An “all clear” signal is given when the fire is extinguished, personnel are no longer endangered, and the Fire and Emergency Services Department has determined the emergency has passed. All emergency equipment used in the emergency response is cleaned and decontaminated using the process outlined in the Waste Analysis Plan, **Attachment 3** to this Permit.

Before operations are resumed, the OSIC conducts an inspection of all safety equipment to ensure the equipment is fit for future use. When the inspection is completed, the Crisis Management Team notifies the USEPA Regional Administrator, state and local authorities, and Major Command that the response operations are satisfactorily completed. The Fire and Emergency Services Department also informs the

OC of the status of the emergency equipment and when normal operations can resume (see Section G-8, Required Reports).

4.4.6 Storage and Treatment of Released Material [6 CCR 1007-3 § 264.56(g)]

Soil contaminated with oil or hazardous materials/wastes is removed with the appropriate removal equipment, such as hand tools for small removals, or heavy construction equipment (backhoes, scoop loaders, etc.) for larger removals. Contaminated soil is assessed to determine appropriate management actions. Any soil, water or debris contaminated with agent are considered listed K902 hazardous wastes and must be managed appropriately. The EMO manages disposal of contaminated material.

Spilled or contaminated material resulting from a hazardous material/waste accident or incident is collected immediately, characterized, and placed in appropriate hazardous waste storage units until final disposal. For chemical agent spills, the CAIRA Plan is followed.

4.4.7 Incompatible Waste [6 CCR 1007-3 § 264.56(h)(1)]

After proper identification, the OSIC ensures that any waste that may be incompatible with the released material is not treated, stored, or otherwise managed in the area in which the incident occurred until cleanup procedures are completed.

4.4.8 Post-Emergency Equipment Maintenance [6 CCR 1007-3 § 264.56(h)(2) and 264.56(i)]

Before operations resume, all safety equipment is inspected. Emergency equipment is also cleaned, inspected, and maintained by the equipment user. State authorities are notified that post-emergency equipment maintenance is completed and that operations resumed.

When this Contingency Plan is implemented, and decontamination and cleanup are completed in affected areas, the Crisis Management Team notifies CDPHE and any local authorities (as applicable) that:

1. Cleanup of the affected areas is completed so that site operations may be resumed without risk of incompatible material coming into contact with spilled material.
2. All emergency equipment is cleaned and readied for its intended use.

4.4.9 Container Spills and Leakage [6 CCR 1007-3 § 264.52 and 264.171]

Any spill or release of chemical agent from a container initiates response procedures discussed in the PCD CAIRA Plan.

Response to a nonagent-related container spill or leak is discussed in the ISCP. Spill or release events are to be reported to the OC and the Fire and Emergency Services Department using the emergency contact number 4911. The Crisis Management Team makes oral notifications to CDPHE. If a reportable quantity is equaled or exceeded, or a release to surface water has occurred, the Crisis Management Team completes and submits the Pollution Incident Report and the appropriate follow-up reports within 15 calendar days to CDPHE.

The procedures to be used to contain spills or leakage, including the removal of leaked or spilled waste and the repair of containers, are discussed in Section G-4e, Control Procedures.

4.5 EMERGENCY EQUIPMENT [6 CCR 1007-3 § 264.52(e)]

The following types of emergency equipment are maintained at PCD for emergency response and are listed in the PCD Contingency Plan:

- Fire protection equipment
- Spill control equipment
- Decontamination equipment

A list of installation emergency equipment maintained at PCD for response to emergencies that are related to permitted storage is provided in **Table 4-2** to this Contingency Plan.

4.6 COORDINATION AGREEMENTS [6 CCR 1007-3 § 264.37 and 264.52(c)]

PCD maintains its own security force, health clinic, and Fire and Emergency Services Department that serve as the primary authorities for emergency response. The Fire and Emergency Services Department

serves as the emergency response team for all incidents involving industrial and/or chemical facilities. These personnel are trained to respond to all incidents that could be encountered at this installation.

Coordination agreements are established within local agencies in the PCD region. Reciprocal medical service agreements are established with the Parkview Episcopal Medical Center and St. Mary Corwin Hospital. Reciprocal fire protection agreements are in place with the Boone Fire Department, Pueblo Rural Fire Department, and TTCL. An example of the agreement is contained in Appendix C of the ISCP, **Appendix A** of this Contingency Plan. Signed copies are kept onsite.

4.7 EVACUATION PLAN [6 CCR 1007-3 § 264.52(f)]

In the event of a health, safety or life-threatening accident, the involved facility is evacuated in accordance with the evacuation plan for that location. Evacuees are directed to a safe area by PCD Security, under direction of the OSC and the OC. The PCD Evacuation Plan and a map of the PCD evacuation routes are attached as **Appendix F** to this Contingency Plan as required by 6 CCR 1007-3, Section 264/265.52(f).

4.8 REQUIRED REPORTS [6 CCR 1007-3 § 264.56(j)]

Any incident requiring implementation of the Contingency Plan is noted in the Operating Record. The CDPHE is notified that the following conditions are met before resuming operations:

- The cleanup is complete and that at no time during a response were wastes that were incompatible with the released materials treated, stored, or disposed of.
- All emergency equipment used to respond to this incident is cleaned and again fit for its intended use.

Within 15 days after an incident that requires implementation of this Contingency Plan, the incident is reported to the Hazardous Waste Division of CDPHE, to the director of CDPHE, and is noted in the Operating Record. The CDPHE is sent a written report within the 15 days specified in the regulation. The report includes the following information:

1. Name, address, and telephone number of the owner or operator
2. Name, address, and telephone number of the facility
3. Date, time, and type of incident
4. Name and quantity of material(s) involved
5. The extent of injuries, if any
6. An assessment of actual or potential hazards to human health or the environment, where this is applicable
7. Estimated quantity and disposition of recovered material that resulted from the incident.

Table 4-1. Telephone Numbers for Key PCD and Army Personnel

Title	Telephone Number
On-Scene Installation Commander (OSIC)	(719) 549-4911 (719) 549-4655
Operations Center (OC)	(719) 549-4211
Installation Emergency Manager	(719) 540-4300 (719) 540-5115
Pueblo County Emergency Operations Center	(719) 583-6259 (Dispatch)

Table 4-2. List of Available Equipment for Use by the Installation Response Team

Equipment	Capability	Quantity ^a	Location ^b
RTAP	Air Monitoring	9	Various Locations Throughout PCD
Excavator	Backhoe	1	Facilities Management Building
Road Grader	Road Grading, Ditch Cleaning	1	Facilities Management Building
Front End Loader	1 cubic yard Capacity	1	Facilities Management Building
Dump Truck	5 cubic yard Capacity	1	Facilities Management Building
Pickup Truck	General Purpose Transportation	2	Facilities Management Building
Environmental Response Vehicle	Contains PIG Spill Kits, Safestep Absorbent Material, Tools Response Equipment, PPE, and Sampling Equipment	1	Environmental Management Office Building
Environmental Response Vehicle (Off Road Capabilities)	Contains PIG Spill Kits, Safe-step Absorbent Material, Tools Response Equipment, PPE, and Sampling Equipment	1	Environmental Management Office Building
Class A Fire Truck, Ladder	1,000 gallon combination water and foam	1	Fire and Emergency Services Department
Class A Fire Truck, Water	750 gallon combination water and foam	1	Fire and Emergency Services Department
Truck, Firefighting	250 gallon	2	Fire and Emergency Services Department
Truck, Rescue and Equipment	Emergency Equipment, Command and Control	1	Fire and Emergency Services Department
Ambulance	Emergency Medical Response	1	Fire and Emergency Services Department
PIG Spill Kits	Spill Kits for Containing Small Spills		Various Locations Throughout PCD
Single Round Containers (SRCs) – certified and ready to use at all time	Secondary containment	4	C-710
MINICAMS®	Air Monitoring	27	Various Locations Throughout PCD
Crew Vans	Personnel Transportation	5	Various Locations Throughout PCD
Shower Trailer	For Hasty Decontamination	1	Various Locations Based on Work Site
Forklift (2,000-pound capacity)	Movement of Pallets and Munitions	4	Various Locations Based on Work Site

Table 4-2. List of Available Equipment for Use by the Installation Response Team (Continued)

Equipment	Capability	Quantity ^a	Location
Forklift (6,000-pound capacity)	Movement of Security Block	2	Various Locations Based on Work Site
Forklift (15,000-pound capacity)	Movement of Security Block	2	Various Locations Based on Work Site
1,000 cubic foot per minute filter (1,000 cfm)	Immediate Igloo Filtration	5	Various Locations Throughout PCD
M12A1 Decontamination Truck	Equipment and Area Decontamination	1	Various Locations Throughout PCD
MPDS (Multipurpose Decontamination System)	Personnel Decontamination	1	Various Locations Throughout PCD

Notes:

^a This list represents equipment available to PCD personnel to conduct operations and respond to incidents and accidents. Limiting Conditions for Operations (LCOs) checklists are work-dependent and derived from this list.

^b PCD will provide specific locations for all equipment in Table 4-2, in accordance with Section I.J.12. of this Permit.

PCD = Pueblo Chemical Depot

PPE = personal protective equipment

RTAP = Real-Time Analytical Platform

APPENDIX A

Installation Spill Contingency Plan (ISCP)

**Pueblo Chemical Depot
Pueblo, Colorado**

**INSTALLATION SPILL
CONTINGENCY PLAN**

**ATTACHMENT 4
SECTION 4.2**

**Pueblo Chemical Depot
Pueblo, Colorado**

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APPENDICES

Appendix A: Spill Report Forms

Appendix B: Reportable Quantities

LIST OF ACRONYMS

AR	Army Regulation
CAIRA	Chemical Accident/Incident Response and Assistance
CDPHE	Colorado Department of Public Health and Environment
CMA	Chemical Materials Agency
DA	Department of Army
DA Pam	Department of Army Pamphlet
EMO	Environmental Management Office
IOSC	Installation On-Scene Coordinator
IRT	Installation Response Team
ISCP	Installation Spill Contingency Plan
LESD	Law Enforcement and Security Division
LTC	Lieutenant Colonel
MSDSs	Material Safety Data Sheets
OC	Operations Center
PAO	Public Affairs Officer
PCAPP	Pueblo Chemical Agent-Destruction Pilot Plant
PCBs	Polychlorinated Biphenyls
PCD	Pueblo Chemical Depot
PDS	Personnel Decontamination Station
POL	Petroleum, Oil, Lubricants
SPCC	Spill Prevention, Control and Countermeasures
USAEC	U.S. Army Environmental Center
USEPA	U.S. Environmental Protection Agency

4.2.1 INTRODUCTION

The Installation Spill Contingency Plan (ISCP) is established to identify procedures to be used at Pueblo Chemical Depot (PCD) to respond to discharges of oil and hazardous substances to the environment. This plan applies to all tenants and contractors who work at PCD.

The ISCP identifies resources, equipment, personnel, and procedures to be used to prevent POL or hazardous substance spills from reaching surface and subsurface water. This plan is also designed to minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or gradual release of oil or hazardous substances to air, soil, or surface water, and will be carried out whenever any of these incidents occur. It also addresses potential sources of oil or hazardous substances identified in the Oil and Hazardous Substance Spill Prevention, Control and Countermeasure (SPCC) Plan. It identifies the Installation On-Scene Coordinator (IOSC), the Installation Response Team (IRT), and their responsibilities for implementing the plan. The ISCP is not applicable to incidents involving toxic chemical munitions. When chemical munitions are involved, the Chemical Accident/Incident Response and Assistance (CAIRA) Plan will be utilized. Additionally, this plan does not cover policies and procedures applicable to nuclear accidents and incidents.

This plan is in compliance with requirements established by AR 200-1; the National Oil and Hazardous Substances Pollution Contingency Plan developed in response to provisions of the Federal Water Pollution Control Act Amendments of 1972; the Resource Conservation and Recovery Act; and 40 CFR Part 264, Subpart D, Contingency Plan and Emergency Procedures. The provisions contained within this plan apply to any activity, commercial or otherwise on PCD including those involving employees, contractors or tenants.

4.2.2 RESPONSIBILITIES

A number of PCD personnel will be available to support implementation of the ISCP. Divisions will provide personnel, equipment, and expertise to allow proper response to spills of oil or hazardous substances. The phone numbers and locations of all positions described below are provided on Table 4.2.1-1.

4.2.2.1 Environmental Management Office Chief

The Environmental Management Office (EMO) Chief has overall responsibility for ensuring the ISCP is implemented. The Chief will have the following duties:

- Ensure the necessary resources are available to meet the requirements set forth in this plan;
- Provide personnel from the office to act as environmental consultants.
- Provide necessary notifications to federal, state, and local authorities during a reportable spill;

- Provide for emergency issuance of contracts for restoration and disposal companies if necessary;
- Maintain after action reports of all actual spills and training spills; and
- Maintain a current ISCP, which will be reviewed and evaluated at the same time as the SPCC Plan. The SPCC Plan will be reviewed and evaluated at least once every 5 years, per 40 CFR §112.5. The cited regulation requires that any change in facility design, construction, operation or maintenance which materially affects the facility's potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shore lines must be entered into the plan within six months of the change, and then approved by a registered professional engineer. Any amendment made to the SPCC Plan must be reflected in the ISCP. It will be the responsibility of EMO to ensure that a copy of the ISCP and all revisions to the ISCP are:
 - Maintained at the facility;
 - Submitted to the local fire department as specified in Section 4.2.2.12, Local Arrangements;
 - Provided to the Colorado Department of Public Health and Environment (CDPHE), U.S. Environmental Protection Agency (USEPA), and other appropriate members on the facility mailing list as revisions to the Hazardous Waste Permit; and
 - Report all reportable spills through proper channels to PCD, Department of the Army (DA), USEPA, CDPHE, and other civil authorities as required. This will include the preparation of all written reports. Reportable spills are defined in AR 200-1 and listed in Appendix B of this plan.

4.2.2.2 Installation On-Scene Coordinator (IOSC)

The Chief of the PCD Fire and Emergency Services Branch is appointed as the IOSC. The IOSC programs and budgets for personnel, materials and equipment required for spill prevention and containment at the installation. The IOSC, in coordination with the Installation Commander, has authority to commit resources to carry out this plan.

The IOSC coordinates and directs all Army efforts to control clean up of Army-caused spills on or near PCD. The IOSC will utilize available equipment and manpower from the IRT to evaluate and respond to all spills. The IOSC will coordinate with the PCD Operations Center (OC) and EMO to ensure they are informed of the progress of clean up efforts.

The IOSC, coordinating with officials responsible for implementing the SPCC Plan, will provide yearly training to test the effectiveness of the ISCP personnel and equipment. The purpose of this training is to ensure timely and effective response in case of a spill. Actual spill events may be used as yearly training to test the effectiveness of the ISCP.

The IOSC will be responsible for inventory of equipment and maintaining the fire and emergency services memorandum of agreements as specified in Section 4.2.3.11. Information with regard to equipment changes will be provided to EMO to update the spill plan as necessary.

4.2.2.3 Office of Legal Counsel

The Office of Legal Counsel will assist the IOSC to ensure that records and samples are adequate for legal purposes, which may include litigation due to pollutant flow past installation boundaries.

4.2.2.4 Public Affairs Officer

Dealing with the public or media is a primary responsibility during an oil or hazardous substance release. The Public Affairs Officer (PAO) will evaluate probable reactions from the media and public. Additionally, in conjunction with the Office of Legal Council, the PAO will prepare news releases and responses to questions from the public. The PAO may also escort civilian news media and public representatives.

4.2.2.5 Public Works Office

Equipment operators and laborers may be needed during spill response to perform various duties. Equipment that can only be operated by members of the Public Works Office will not be allowed in the hot zone, but may be used in locations where there is no potential for equipment operators to be exposed.

4.2.2.6 Risk Management Division Chief

The Risk Management Division is composed of the Fire and Emergency Services Branch, Surveillance Branch, and the Safety Office. Because firefighters make up the IRT, the Risk Management Division Chief is key in ensuring the members of the division are proficient in their roles.

4.2.2.6.1 Fire and Emergency Services Branch

In the absence of the appointed IOSC and during off duty hours, the Chief or On-Duty Chief of the Fire and Emergency Services Branch will carry out the duties of the IOSC.

The Chief of Fire and Emergency Services Branch will ensure that all firefighters are trained on the Initial Oil or Hazardous Substance Spill Report, spill response procedures, and proper follow-up actions. The Initial Oil or Hazardous Substance Spill Report is contained in Appendix A.

4.2.2.6.2 Safety Office

The Safety Office will be available to assist the IOSC in determining the cause of spills and the extent of the safety hazards created by such spills (risk assessment and mitigation recommendations).

4.2.2.7 Law Enforcement and Security Division

The Law Enforcement and Security Division (LESD) will assist the IOSC in securing and safeguarding the spill site for the duration of the clean-up activities. LESD will provide personnel to aid in evacuation of individuals if necessary. In the event that only four firefighters are on duty, personnel will staff the fire station alarms and telephones during duty hours. During non-duty hours, LESD will provide security personnel to staff the fire station alarms and telephones during an incident.

4.2.2.8 Occupational Health Clinic

The Occupational Health Clinic will coordinate with and provide appropriate environmental and occupational health support to assist the IOSC. When requested, the clinic will assess hazards and potential hazards and recommend appropriate action to the IOSC.

4.2.2.9 Pest Control Officer

PCD contracts for all pest management activities. The Pest Control Officer will coordinate with the IOSC in the event of a spill associated with a pest control contractor. Prior to allowing a pest control contractor to start work on the installation, the Pest Control Officer will coordinate with the IOSC, Fire and Emergency Services, and the contractor. This coordination will occur at least annually or any time a different pest control contractor is utilized at the installation. Material Safety Data Sheets (MSDSs) will be provided to the IOSC, and Fire and Emergency Services. The Pest Control Officer will ensure MSDSs are provided to the IOSC and the Fire Department if different chemicals, other than those indicated during the annual or initial review, are utilized during pest control activities.

4.2.3 ORGANIZATION

4.2.3.1 Training

Personnel responsible for implementation of the ISCP will establish a thorough training program per OSHA, 29 CFR §§1910 and 1926, as well as a periodic health monitoring program for military and civilian personnel, including project managers, employed or otherwise responsible for carrying out official duties at oil and hazardous substance spill sites. Tenants will provide appropriate training for their own employees.

The PCD Training Office has the responsibility to ensure that training for all members of the IRT is scheduled, coordinated, and completed. Training will be conducted annually. The PCD Training Office will maintain official records of such training. Additionally, the IOSC will plan and carry out annual exercises to test implementation of the ISCP. Records documenting exercises will be maintained by the Training Office. Actual spills can be used to meet the annual training requirement.

4.2.3.2 Response

At all times, there must be at least one employee at the installation that can act as the IOSC. The IOSC will be responsible for coordinating all emergency response measures. The IOSC must be thoroughly familiar with all aspects of the SPCC Plan, the ISCP, all operations and activities at

the installation, the location and characteristics of waste handled, the location of pertinent records at the installation, and the installation layout. In addition, this person must have the authority, in coordination with the Installation Commander; to commit the resources needed to carry out the ISCP.

4.2.3.3 Initial Report

Anyone may report a spill. All personnel or employees are required to immediately report any observed oil, hazardous substance or pesticide spill, or evidence of a spill, such as a slick or sheen on water from oil, gasoline, or other hazardous polluting substance. Spill events are to be reported to the PCD OC, the IOSC, and EMO.

Persons discovering a release will also take immediate action, if feasible, to control the release (e.g., stop leaks, isolate spill). In all instances, the discoverer will not endanger their personal safety to control the release. The discoverer shall call 911 as soon as possible. Employees dealing with hazardous substances will be trained on hazardous substances and the SPCC Plan, which identifies locations of hazardous substances and proper reporting procedures during releases of hazardous substances. In less serious circumstances, it may be appropriate to address the release and then make notification.

Personnel from EMO, the Fire and Emergency Services Branch, and the OC are supplied with worksheets to record the initial reports of an oil or hazardous substance spill, a copy of which is included as Appendix A. The completed original is then turned over to the EMO for record.

4.2.3.4 Actions During an Oil or Hazardous Substance Spill

4.2.3.4.1 Immediate Action

The IOSC will be notified immediately. Refer to Table 4.2.1-1 for the IOSC phone number. The IOSC will be responsible for implementing the ISCP. In the absence of the appointed IOSC, the On-Duty Chief of the Fire Emergency Services Branch will serve as the IOSC.

The IOSC has the responsibility to:

- Deploy the IRT;
- Determine the magnitude of the spill;
- Notify the Installation Commanding Officer;
- Make necessary notifications to EMO, Security, Public Works, the Pest Control Officer, the Safety Office, Public Affairs, and CMA Environmental and Legal Counsel; and
- Determine the quantity of material released and determine whether a reportable quantity of oil (25 gallons or more) or hazardous substance (refer to Appendix B) was released to the environment.

When a pesticide spill occurs, the following actions will be taken in addition to those listed above:

- Identify the pesticide, herbicide or rodenticide container to identify the poison category;
- Refer to the MSDS for that substance to determine the appropriate hazards and spill response information (the IOSC will have a copy of the MSDS for any chemicals being used);
- Seek immediate medical attention for those individuals involved in the spill;
- Notify the PCD Occupational Health Clinic and provide the pesticide name and poison category;
- Contact the Pest Control Officer to aid in the response; and
- Personnel exposed to the substances should remove contaminated clothing and decontaminate affected areas using methods identified on the MSDS for that hazardous substance.

4.2.3.4.2 Emergency Situations

Whenever there is an emergency situation involving hazardous wastes at PCD, the IOSC will immediately take the following actions utilizing the appropriate portions of this section:

- Notify the Installation Commanding Officer of the emergency situation.
- Assemble the OC emergency response personnel. Refer to Section 4.2.3.6 for details regarding the OC.
- Activate internal alarms or communication systems, where applicable, to notify all installation personnel.
- Notify appropriate state or local agencies with designated response roles if their assistance is required.

Whenever there is a release, fire, or explosion, the IOSC must immediately identify the character, exact source, amount, and area of extent of any released materials. This may be done by observation or review of facility records or manifests and, if necessary, by chemical analysis.

The IOSC, in coordination with EMO and appropriate state, federal and local authorities, must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemicals used to control fire and heat induced explosions).

If the IOSC determines that the facility has had a release, fire, or explosion that could threaten human health or the environment outside the facility, the IOSC must report those findings as identified in the following paragraphs:

- If the assessment indicates that evacuation of local areas may be advisable, the IOSC must immediately notify Public Safety Officials. The IOSC must be available to make downwind hazard analysis and help officials decide whether local areas should be evacuated.
- EMO must immediately notify the National Response Center, (800) 424-8802. The report must include:
 - Name and telephone number of person making notification;
 - Name and address of facility;
 - Time and type of incident (e.g., spill, fire, explosion);
 - Name and quantity of material involved to extent known;
 - The extent of injuries, if any; and
 - The possible hazards to human health or the environment outside the facility.

During an emergency, the IOSC must take all responsible measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the installation. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

If a facility on the installation stops operations in response to a fire, explosion, or release, the IOSC must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

Immediately after an emergency, the IOSC, in coordination with EMO, must provide for treating, storing, or disposing of recovered waste, contaminated soil, or surface water, or any other material that results from a release, fire, or explosion at the installation.

The IOSC must ensure that, in the affected area(s) of the installation:

- No waste that may be incompatible with the released material is treated or stored until clean-up procedures are completed and
- All emergency equipment listed in the contingency plan is replaced, decontaminated, and in appropriate condition for its intended use before operations are resumed.

EMO will notify the appropriate state and local authorities that the installation is in compliance with the above paragraph before operations are resumed in the affected area(s) of the installation.

4.2.3.4.3 Follow-up Reporting Requirements

EMO must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. EMO must contact the Colorado Department of Public

Health and Environment (CDPHE) within 24 hours of implementing the ISCP. Within 15 calendar days after the incident, in conjunction with the Office of Legal Council, EMO must submit a written report on the incident to the EPA Region VIII Administrator and CDPHE, Hazardous Materials and Waste Management Division. The written report will be hand-carried or sent by certified mail.

The written report submitted to CDPHE must include the following:

- Description of the incident and its cause;
- The time period associated with the incident (including exact dates and times);
- Whether any non-compliance associated with the incident has been corrected;
- If the non-compliance has not been corrected, include time estimates for making corrections; and
- Steps taken or planned to prevent future recurrence of the incident.

The following information must be included on the report submitted to USEPA:

- Name, address, and telephone number of EMO;
- Name, address, and telephone number of the facility;
- Date, time, and type of incident (e.g., spill, fire, explosion);
- Name and quantity of material(s) involved;
- The extent of injuries, if any;
- An assessment of actual or potential hazards to human health or the environment, where this is applicable; and
- Estimated quantity and disposition of recovered material that resulted from the incident.

One report can be prepared and submitted to both parties as long as the appropriate information is included. Addresses and phone numbers for USEPA and CDPHE are provided on Table 4.2.1-2.

The OC will determine and execute any additional Army and Department of Defense reporting requirements.

4.2.3.5 Actions to be Taken During a Release at the Chemical Storage Igloos and the Permitted Hazardous Waste Igloos, G1009, G1109, G1107, and G1110

Response action to all incidents involving agent-related materials and/or waste will be carried out as identified in the PCD Chemical Accident/Incident Response and Assistance (CAIRA) Plan. The installation OC emergency response personnel will be immediately activated. Four permitted hazardous waste storage areas, Igloos G1009, G1109, G1107, and G1110, are located within the Munitions Storage Area A. Details surrounding potential spills at these igloos are contained within the SPCC Plan. In the event of a chemical accident or spill, the CAIRA plan has operational priority and is executed by the installation commander. The plan includes an evacuation plan, containment, decontamination, clean up, recovery and remedial operations.

4.2.3.6 Operations Center (OC)

This center is located in the installation OC at Building 2. The OC will be utilized whenever there is an imminent emergency situation. Upon arrival at the spill location, the IOSC will assess the severity of the incident (e.g., casualties, fire or explosion hazard, large release) and determine the appropriate coordination site. If the OC is to be utilized, the IOSC, Commander, or OC personnel will immediately contact personnel needed in the OC.

Refer to Table 4.2.1-1 for appropriate phone numbers.

4.2.3.7 Installation Response Team (IRT)

4.2.3.7.1 IRT Personnel

The IRT will be alerted immediately and have the duty of initial response at an incident. The IRT will consist of firefighters. All firefighters will be members of the IRT and will be proficient in responding to an incident. At a minimum, four firefighters are on duty at all times. If additional firefighters are needed to respond, they will be called from the Fire Recall list.

4.2.3.7.2 IRT Equipment

Table 3-1 lists available equipment for use during emergency response. The equipment listed includes heavy equipment, trucks, absorbent socks, PIG kits, mats, and fire fighting equipment. Equipment that can only be operated by members of the Public Works Office will not be allowed in the hot zone, but may be used in locations where there is no potential for equipment operators to be exposed.

4.2.3.8 Routine Surveillance to Detect Spills

All employees of PCD are charged with the responsibility to recognize and report spills. In addition, EMO personnel will conduct periodic surveys of all oil and chemical storage facilities on PCD to detect unreported discharges. The SPCC Plan lists estimated maximum releases and controls to be taken at potential spill sites.

4.2.3.9 Procedures for Spill Mitigation

4.2.3.9.1 Identification

Primary identification of pollutants will depend on the ability of the IOSC or the IRT to trace the discharge to its source. Whenever possible, container labels will be preserved to include a complete identification for preparing incident reports. When identification is not possible by this method, samples will be taken to a local laboratory for immediate analysis.

4.2.3.9.2 Containment

In all cases, employees should attempt to confine the spill in the smallest area possible using earth dams, berms and/or other man-made barricades. Inlets to sewer or stormwater systems will be blocked or bermed. Response personnel will ensure drainage ways are protected as well.

4.2.3.9.3 Removal

If possible, oil or liquids should be removed by using pumps. For smaller amounts, use sorbent materials (pads, safe step, etc.) to absorb the contaminant. On water, only floating or retrievable sorbent products should be used.

4.2.3.9.4 Reclamation

When possible, hazardous substances will be reclaimed and containerized. An attempt will be made to reclaim and recycle waste oil or other hazardous substances. Environmental response contractors may be called for assistance if the IRT is not able to adequately respond.

4.2.3.9.5 Disposal

All oil, gas, or other substances that are not useable after reclamation will be disposed in accordance with existing State of Colorado and Federal regulations. Environmental response contractors may be called for assistance if the IRT is not able to adequately respond. Contaminated soil may be contained and sampled to determine whether it is a hazardous or non-hazardous material. Appropriate disposal alternatives will be formulated based on the sample analysis. Disposal alternatives will conform with appropriate federal and state regulatory requirements. EMO will be consulted prior to disposal of material.

4.2.3.9.6 Restoration

EMO will aid in determining restoration actions for the area of contamination. Environmental response contractors may be called for assistance if the IRT is not able to adequately respond.

4.2.3.9.7 Decontamination

All equipment and clothing will be decontaminated in accordance with currently accepted decontamination practices. When working with certain hazardous substances (e.g., PCBs), it may be necessary to dispose of the hand tools, overshoes, and gloves with the waste. Such equipment will be replaced in this circumstance.

4.2.3.10 Priority Water Areas

PCD has one permanent surface drainage stream, Boone Creek, to protect. Priority will be given to Boone Creek and the water wells. Second priority goes to any drainage patterns that sometimes wash in the spring and could possibly result in a pollutant leaving the installation. The SPCC Plan also contains a discussion related to water drainage areas at PCD.

4.2.3.11 Local Arrangements and Memorandum of Agreements (MOAs)

Reciprocal Fire Protection Agreements and MOAs have been made with the Boone Volunteer Fire Department, Pueblo Rural Fire Department, and the Transportation Technology Center Fire Department. MOAs for medical support have been made with local hospitals, Fort Carson, and Flight for Life. Copies of these agreements shall be maintained by the IOSC, Fire Chief, Building 61 for reference and will be available for review upon request.

4.2.3.12 Evacuation Plan

In the event of a health, safety or life-threatening accident, the affected facility, facilities, or the installation will be evacuated in accordance with the evacuation plan for that location. Tenants and contractors will submit an evacuation plan to their PCD host. Evacuees will be directed to a safe area by Security under direction of the IOSC.

REFERENCES*

AR 200-1, update, Environmental Protection and Enhancement, Chapter 3, Oil and Hazardous Substances Spills.

Council on Environmental Quality National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 1510; 40 FR 6282, Feb 10, 1975, amended 41 FR 12658, March 26, 1976).

AMC Reg 11-5, Environmental Enhancement and Pollution Abatement; Part 17, Oil Spills, Prevention and Control.

Environmental Protection Agency Regulations on Criteria for State, Local and Regional Oil Removal Contingency Plans (40 CFR 109).

Environmental Protection Agency Regulations on Oil Pollution Prevention (40 CFR 112).

Environmental Protection Agency Regulations on Designation of Hazardous Substances under the Federal Water Pollution Control Act (40 CFR §116).

Environmental Protection Agency Regulations on Determination of Reportable Quantities for Hazardous Substances (40 CFR §117).

Federal Water Pollution Control Act, 33 USC §1321 as amended by Clean Water Act of 1977 (commonly referred to as Clean Water Act), §311, Oil and Hazardous Substance Liability.

AR 50-6, Chemical Surety.

AR 385-61, The Army Chemical Agent Safety Program.

DA Pam 385-61, Toxic Chemical Agent Safety Standards.

6 CCR 1007-3 Response to Leaks, Spills, and Disposition, §264.196.

* All references are latest revision unless otherwise indicated.

TABLES

Table 4.2.1-1: Telephone Numbers for Key PCD and Army Personnel

Table 4.2.1-2: Telephone Numbers and Addresses for Key Organizations

Table 4.2.2-1: List of Available Equipment for use by the Installation Response Team

Table 4.2.1-1: Telephone Numbers for Key PCD and Army Personnel

Title	Location	Telephone Number
Operations Center	Building 2	4211 ⁽¹⁾
Environmental Management Office	Building 54	4201 ⁽¹⁾
IOSC (Chief, Fire and Emergency Services Branch)	Building 61	4688 ⁽¹⁾
Installation Commanding Officer	Building 1	4141 ⁽¹⁾
Public Works	Building 3	4145 ⁽¹⁾
Office of Legal Counsel	Aberdeen, MD	4652 ⁽²⁾
CMA Environmental	Aberdeen, MD	4199 ⁽²⁾
Public Affairs Officer	Building 1	4135 ⁽¹⁾ 4119 ⁽¹⁾
Risk Management	Building 3	4544 ⁽¹⁾
Fire and Emergency Services	Building 61	4655 ⁽¹⁾
Safety	Building 3	4544 ⁽¹⁾ 4987 ⁽¹⁾ 4881 ⁽¹⁾
Law Enforcement and Security	Building 54	4962 ⁽¹⁾
Occupational Health Clinic	Building 5	4176 ⁽¹⁾
Pest Control Officer	Building 3	4279 ⁽¹⁾

NOTES:

⁽¹⁾ Commercial Area Code is (719) 549, which corresponds to DSN 749

⁽²⁾ Commercial Area Code is (410) 671, which corresponds to DSN 584

Table 4.2.1-2: Telephone Numbers and Addresses for Key Organizations

Title	Address	Telephone Number
Colorado Department of Public Health and Environment –Emergency Management Program	8100 Lowry Blvd. Denver, CO 80228	(877) 518-5608
Colorado Department of Public Health and Environment	4300 Cherry Creek Dr. South Denver, CO 80246	(303) 692-3300
U.S. Environmental Protection Agency Region VIII	One Denver Place 999 18 th Street, Suite 500 Denver, CO 80202-2405	(303) 312-6981
Pueblo Chemical Depot Fire Prevention/Protection Department	Building 61 Pueblo Chemical Depot	(719) 549-4655
Pueblo County Emergency Operations Center, LEPC	NA	(719) 583-6250 (non-emergency) Sheriff 911
National Response Center	NA	(800) 424-8802
Pueblo Fire Department	1551 Bonforte Pueblo, CO 81001	(719) 542-1352
Colorado Emergency Planning Commission (CEPC), c/o Colorado Department of Public Health and Environment SARA Title III Reports	4300 Cherry Creek Drive South Denver, CO 80246-1530	(877) 518-5608

Table 4.2.2-1: List of Available Equipment for use by the Installation Response Team

Equipment	Capability	Qty	Location
Distributor, Water Tank	250 gallon	1	Building 47
Excavator	Backhoe	1	Building 47
Tractor	Caterpillar Type for Ditch Digging	2	Building 47
Road Grader	Road Grading, Ditch Cleaning	2	Building 47
Front End Loader	1 CY Capacity	2	Building 47
Crane, Hydraulic	25 ton for major material handling	1	Building 47
Dump Truck	5 CY Capacity	3	Building 47
Pickup Truck	General Purpose Transportation	2	Building 47
Environmental Response Vehicle	Contains PIG Spill Kits, Safestep Absorbent Material, Tools Response Equipment, PPE, and Sampling Equipment	1	Building 54
Pierce, 61' Skyboom,	540 gallons water 20 gallons foam 1500 gpm pumping capacity	1	Building 61
Ameritec Pumper	660 gallons of water 75 gallons of foam 1000 gpm pumping capacity	1	Building 61
GMC Mini Pumper	200 gallons water 250 gpm pumping capacity	1	Building 61
KME Water Tender	1200 gallons water 250 gpm pumping capacity	1	Building 61
PIG Spill Kits	Spill Kits for Containing Small Spills	5	Buildings 45, 82, 114, 487, 540

APPENDIX A

Spill Report Forms

Report 1: Oil or Hazardous Substance Spill Initial Report

Report 2: Pollution Incident Report

OIL OR HAZARDOUS SUBSTANCE SPILL INITIAL REPORT (Page 1 of 2)

Prepare this report in duplicate; retain copy and give original to the Installation On-Scene Coordinator.

Date: _____

Time: _____

Person Reporting Spill: _____

Phone Number for Additional Information: _____

Location of Spill: _____

Type of Spill: ☐ Oil ☐ Gasoline ☐ Chemical (Specify Below)

☐ Pesticide ☐ Other (Specify Below) ☐ Unknown

Specify: _____

Size: ☐ Small (less than 100 ft² contaminated)

☐ Medium (less than 1 acre contaminated)

☐ Large (more than 1 acre contaminated)

Cause or source of Spill: _____

Action taken to contain Spill: _____

Other Information: _____

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears to be a standard notebook page.

Name of Person Receiving Initial Report: _____

Time Initial Report Made: _____

* For help completing the report, contact EMO at x4201 *

Pollution Incident Report
(Page 1 of 3)

Name and Location of Installation: _____

Name of Installation Commanding Officer: _____

Phone Number: _____

Name of Installation On-Scene Coordinator: _____

Phone Number: _____

Exact Date and Time of Incident or Exact Time of Discovery: _____

Location of Incident: _____

Cause or Source of Incident: _____

Type of Spill: ☐ Oil ☐ Gasoline ☐ Chemical (Specify Below)

☐ Pesticide ☐ Other (Specify Below) ☐ Unknown

Specify: _____

Specify the Size of Oil or Hazardous Substance Discharge: ☐ Major Size (ft²) _____

☐ Medium Size (ft²) _____

☐ Minor Size (ft²) _____

Specify Quantity of Substance Discharged: Volume: _____

Weight: _____

Pollution Incident Report
(Page 2 of 3)

Samples Collected: ☐ Yes ☐ No

If Yes, Identification Number: _____

Damage Assessment (fish, wildlife, underground water supplies, surface water): _____

Potential Dangers (fire, explosion, toxic vapors, etc.): _____

Assistance Required: ☐ Yes ☐ No

If Yes, identify assistance: _____

Remedial Action Taken: ☐ Yes ☐ No

If Yes, identify action: _____

If No, estimate the date of completion: _____

APPENDIX B

Reportable Quantities

[Code of Federal Regulations]
[Title 40, Volume 18]
[Revised as of July 1, 2001]
From the U.S. Government Printing Office via GPO Access
[CITE: 40CFR117.3]

[Page 109-113]

TITLE 40--PROTECTION OF ENVIRONMENT

CHAPTER I--ENVIRONMENTAL PROTECTION
AGENCY (CONTINUED)

PART 117--DETERMINATION OF REPORTABLE QUANTITIES FOR HAZARDOUS SUBSTANCES--Tab

Subpart A--General Provisions

Sec. 117.3 Determination of reportable quantities.

Each substance in Table 117.3 that is listed in Table 302.4, 40 CFR part 302, is assigned the reportable quantity listed in Table 302.4 for that substance.

Table 117.3--Reportable Quantities of Hazardous Substances Designated Pursuant to Section 311 of the Clean Water Act

Note: The first number under the column headed "RQ" is the reportable quantity in pounds. The number in parentheses is the metric equivalent in kilograms. For convenience, the table contains a column headed "Category" which lists the code letters "X", "A", "B", "C", and "D" associated with reportable quantities of 1, 10, 100, 1000, and 5000 pounds, respectively.

Table 117.3--Reportable Quantities of Hazardous Substances Designated Pursuant to Section 311 of the Clean Water Act

Material	Category	RQ in pounds (kilograms)
Acetaldehyde.....	C.....	1,000 (454)
Acetic acid.....	D.....	5,000 (2,270)
Acetic anhydride.....	D.....	5,000 (2,270)
Acetone cyanohydrin.....	A.....	10 (4.54)
Acetyl bromide.....	D.....	5,000 (2,270)
Acetyl chloride.....	D.....	5,000 (2,270)
Acrolein.....	X.....	1 (0.454)
Acrylonitrile.....	B.....	100 (45.4)
Adipic acid.....	D.....	5,000 (2,270)
Aldrin.....	X.....	1 (0.454)
Allyl alcohol.....	B.....	100 (45.4)
Allyl chloride.....	C.....	1,000 (454)
Aluminum sulfate.....	D.....	5,000 (2,270)
Ammonia.....	B.....	100 (45.4)
Ammonium acetate.....	D.....	5,000 (2,270)
Ammonium benzoate.....	D.....	5,000 (2,270)
Ammonium bicarbonate.....	D.....	5,000 (2,270)
Ammonium bichromate.....	A.....	10 (4.54)
Ammonium bifluoride.....	B.....	100 (45.4)
Ammonium bisulfite.....	D.....	5,000 (2,270)
Ammonium carbamate.....	D.....	5,000 (2,270)

Ammonium carbonate.....	D.....	5,000 (2,270)
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Ammonium chloride.....	D.....	5,000 (2,270)
Ammonium chromate.....	A.....	10 (4.54)
Ammonium citrate dibasic.....	D.....	5,000 (2,270)
Ammonium fluoborate.....	D.....	5,000 (2,270)
Ammonium fluoride.....	B.....	100 (45.4)
Ammonium hydroxide.....	C.....	1,000 (454)
Ammonium oxalate.....	D.....	5,000 (2,270)
Ammonium silicofluoride.....	C.....	1,000 (454)
Ammonium sulfamate.....	D.....	5,000 (2,270)
Ammonium sulfide.....	B.....	100 (45.4)
Ammonium sulfite.....	D.....	5,000 (2,270)
Ammonium tartrate.....	D.....	5,000 (2,270)
Ammonium thiocyanate.....	D.....	5,000 (2,270)
Amyl acetate.....	D.....	5,000 (2,270)
Aniline.....	D.....	5,000 (2,270)
Antimony pentachloride.....	C.....	1,000 (454)
Antimony potassium tartrate.....	B.....	100 (45.4)
Antimony tribromide.....	C.....	1,000 (454)
Antimony trichloride.....	C.....	1,000 (454)
Antimony trifluoride.....	C.....	1,000 (454)
Antimony trioxide.....	C.....	1,000 (454)
Arsenic disulfide.....	X.....	1 (0.454)
Arsenic pentoxide.....	X.....	1 (0.454)
Arsenic trichloride.....	X.....	1 (0.454)
Arsenic trioxide.....	X.....	1 (0.454)
Arsenic trisulfide.....	X.....	1 (0.454)
Barium cyanide.....	A.....	10 (4.54)
Benzene.....	A.....	10 (4.54)
Benzoic acid.....	D.....	5,000 (2,270)
Benzonitrile.....	D.....	5,000 (2,270)
Benzoyl chloride.....	C.....	1,000 (454)
Benzyl chloride.....	B.....	100 (45.4)
Beryllium chloride.....	X.....	1 (0.454)
Beryllium fluoride.....	X.....	1 (0.454)
Beryllium nitrate.....	X.....	1 (0.454)
Butyl acetate.....	D.....	5,000 (2,270)
Butylamine.....	C.....	1,000 (454)
n-Butyl phthalate.....	A.....	10 (4.54)
Butyric acid.....	D.....	5,000 (2,270)
Cadmium acetate.....	A.....	10 (4.54)
Cadmium bromide.....	A.....	10 (4.54)
Cadmium chloride.....	A.....	10 (4.54)
Calcium arsenate.....	X.....	1 (0.454)
Calcium arsenite.....	X.....	1 (0.454)
Calcium carbide.....	A.....	10 (4.54)
Calcium chromate.....	A.....	10 (4.54)
Calcium cyanide.....	A.....	10 (4.54)
Calcium dodecylbenzenesulfonate.....	C.....	1,000 (454)
Calcium hypochlorite.....	A.....	10 (4.54)
Captan.....	A.....	10 (4.54)
Carbaryl.....	B.....	100 (45.4)
Carbofuran.....	A.....	10 (4.54)
Carbon disulfide.....	B.....	100 (45.4)
Carbon tetrachloride.....	A.....	10 (4.54)
Chlordane.....	X.....	1 (0.454)

Chlorine.....	A.....	10 (4.54)
Chlorobenzene.....	B.....	100 (45.4)
Chloroform.....	A.....	10 (4.54)
Chlorosulfonic acid.....	C.....	1,000 (454)
Chlorpyrifos.....	X.....	1 (0.454)
Chromic acetate.....	C.....	1,000 (454)
Chromic acid.....	A.....	10 (4.54)
Chromic sulfate.....	C.....	1,000 (454)
Chromous chloride.....	C.....	1,000 (454)
Cobaltous bromide.....	C.....	1,000 (454)
Cobaltous formate.....	C.....	1,000 (454)
Cobaltous sulfamate.....	C.....	1,000 (454)
Coumaphos.....	A.....	10 (4.54)
Cresol.....	B.....	100 (45.4)
Crotonaldehyde.....	B.....	100 (45.4)
Cupric acetate.....	B.....	100 (45.4)

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Cupric acetoarsenite.....	X.....	1 (0.454)
Cupric chloride.....	A.....	10 (4.54)
Cupric nitrate.....	B.....	100 (45.4)
Cupric oxalate.....	B.....	100 (45.4)
Cupric sulfate.....	A.....	10 (4.54)
Cupric sulfate, ammoniated.....	B.....	100 (45.4)
Cupric tartrate.....	B.....	100 (45.4)
Cyanogen chloride.....	A.....	10 (4.54)
Cyclohexane.....	C.....	1,000 (454)
2,4-D Acid.....	B.....	100 (45.4)
2,4-D Esters.....	B.....	100 (45.4)
DDT.....	X.....	1 (0.454)
Diazinon.....	X.....	1 (0.454)
Dicamba.....	C.....	1,000 (454)
Dichlobenil.....	B.....	100 (45.4)
Dichlone.....	X.....	1 (0.454)
Dichlorobenzene.....	B.....	100 (45.4)
Dichloropropane.....	C.....	1,000 (454)
Dichloropropene.....	B.....	100 (45.4)
Dichloropropene-Dichloropropane (mixture).....	B.....	100 (45.4)
2,2-Dichloropropionic acid.....	D.....	5,000 (2,270)
Dichlorvos.....	A.....	10 (4.54)
Dicofol.....	A.....	10 (4.54)
Dieldrin.....	X.....	1 (0.454)
Diethylamine.....	B.....	100 (45.4)
Dimethylamine.....	C.....	1,000 (454)
Dinitrobenzene (mixed).....	B.....	100 (45.4)
Dinitrophenol.....	A.....	10 (45.4)
Dinitrotoluene.....	A.....	10 (4.54)
Diquat.....	C.....	1,000 (454)
Disulfoton.....	X.....	1 (0.454)
Diuron.....	B.....	100 (45.4)
Dodecylbenzenesulfonic acid.....	C.....	1,000 (454)
Endosulfan.....	X.....	1 (0.454)
Endrin.....	X.....	1 (0.454)
Epichlorohydrin.....	B.....	100 (45.4)
Ethion.....	A.....	10 (4.54)
Ethylbenzene.....	C.....	1,000 (454)
Ethylenediamine.....	D.....	5,000 (2,270)

Ethylenediamine-tetraacetic acid (EDTA).....	D.....	5,000 (2,270)
Ethylene dibromide.....	X.....	1 (0.454)
Ethylene dichloride.....	B.....	100 (45.4)
Ferric ammonium citrate.....	C.....	1,000 (454)
Ferric ammonium oxalate.....	C.....	1,000 (454)
Ferric chloride.....	C.....	1,000 (454)
Ferric fluoride.....	B.....	100 (45.4)
Ferric nitrate.....	C.....	1,000 (454)
Ferric sulfate.....	C.....	1,000 (454)
Ferrous ammonium sulfate.....	C.....	1,000 (454)
Ferrous chloride.....	B.....	100 (45.4)
Ferrous sulfate.....	C.....	1,000 (454)
Formaldehyde.....	B.....	100 (45.4)
Formic acid.....	D.....	5,000 (2,270)
Fumaric acid.....	D.....	5,000 (2,270)
Furfural.....	D.....	5,000 (2,270)
Guthion.....	X.....	1 (0.454)
Heptachlor.....	X.....	1 (0.454)
Hexachlorocyclopentadiene.....	A.....	10 (4.54)
Hydrochloric acid.....	D.....	5,000 (2,270)
Hydrofluoric acid.....	B.....	100 (45.4)
Hydrogen cyanide.....	A.....	10 (4.54)
Hydrogen sulfide.....	B.....	100 (45.4)
Isoprene.....	B.....	100 (45.4)
Isopropanolamine dodecylbenzenesulfonate.	C.....	1,000 (454)
Kepone.....	X.....	1 (0.454)
Lead acetate.....	A.....	10 (4.54)
Lead arsenate.....	X.....	1 (0.454)
Lead chloride.....	A.....	10 (4.54)
Lead fluoborate.....	A.....	10 (4.54)
Lead fluoride.....	A.....	10 (4.54)
Lead iodide.....	A.....	10 (4.54)

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Lead nitrate.....	A.....	10 (4.54)
Lead stearate.....	A.....	10 (4.54)
Lead sulfate.....	A.....	10 (4.54)
Lead sulfide.....	A.....	10 (4.54)
Lead thiocyanate.....	A.....	10 (4.54)
Lindane.....	X.....	1 (0.454)
Lithium chromate.....	A.....	10 (4.54)
Malathion.....	B.....	100 (45.4)
Maleic acid.....	D.....	5,000 (2,270)
Maleic anhydride.....	D.....	5,000 (2,270)
Mercaptodimethur.....	A.....	10 (4.54)
Mercuric cyanide.....	X.....	1 (0.454)
Mercuric nitrate.....	A.....	10 (4.54)
Mercuric sulfate.....	A.....	10 (4.54)
Mercuric thiocyanate.....	A.....	10 (4.54)
Mercurous nitrate.....	A.....	10 (4.54)
Methoxychlor.....	X.....	1 (0.454)
Methyl mercaptan.....	B.....	100 (45.4)
Methyl methacrylate.....	C.....	1,000 (454)
Methyl parathion.....	B.....	100 (45.4)
Mevinphos.....	A.....	10 (4.54)
Mexacarbate.....	C.....	1,000 (454)

Monoethylamine.....	B.....	100 (45.4)
Monomethylamine.....	B.....	100 (45.4)
Naled.....	A.....	10 (4.54)
Naphthalene.....	B.....	100 (45.4)
Naphthenic acid.....	B.....	100 (45.4)
Nickel ammonium sulfate.....	B.....	100 (45.4)
Nickel chloride.....	B.....	100 (45.4)
Nickel hydroxide.....	A.....	10 (4.54)
Nickel nitrate.....	B.....	100 (45.4)
Nickel sulfate.....	B.....	100 (45.4)
Nitric acid.....	C.....	1,000 (454)
Nitrobenzene.....	C.....	1,000 (454)
Nitrogen dioxide.....	A.....	10 (4.54)
Nitrophenol (mixed).....	B.....	100 (45.4)
Nitrotoluene.....	C.....	1,000 (454)
Paraformaldehyde.....	C.....	1,000 (454)
Parathion.....	A.....	10 (4.54)
Pentachlorophenol.....	A.....	10 (4.54)
Phenol.....	C.....	1,000 (454)
Phosgene.....	A.....	10 (4.54)
Phosphoric acid.....	D.....	5,000 (2,270)
Phosphorus.....	X.....	1 (0.454)
Phosphorus oxychloride.....	C.....	1,000 (454)
Phosphorus pentasulfide.....	B.....	100 (45.4)
Phosphorus trichloride.....	C.....	1,000 (454)
Polychlorinated biphenyls.....	X.....	1 (0.454)
Potassium arsenate.....	X.....	1 (0.454)
Potassium arsenite.....	X.....	1 (0.454)
Potassium bichromate.....	A.....	10 (4.54)
Potassium chromate.....	A.....	10 (4.54)
Potassium cyanide.....	A.....	10 (4.54)
Potassium hydroxide.....	C.....	1,000 (454)
Potassium permanganate.....	B.....	100 (45.4)
Propargite.....	A.....	10 (4.54)
Propionic acid.....	D.....	5,000 (2,270)
Propionic anhydride.....	D.....	5,000 (2,270)
Propylene oxide.....	B.....	100 (45.4)
Pyrethrins.....	X.....	1 (0.454)
Quinoline.....	D.....	5,000 (2,270)
Resorcinol.....	D.....	5,000 (2,270)
Selenium oxide.....	A.....	10 (4.54)
Silver nitrate.....	X.....	1 (0.454)
Sodium.....	A.....	10 (4.54)
Sodium arsenate.....	X.....	1 (0.454)
Sodium arsenite.....	X.....	1 (0.454)
Sodium bichromate.....	A.....	10 (4.54)
Sodium bifluoride.....	B.....	100 (45.4)
Sodium bisulfite.....	D.....	5,000 (2,270)
Sodium chromate.....	A.....	10 (4.54)

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Sodium cyanide.....	A.....	10 (4.54)
Sodium dodecylbenzenesulfonate..	C.....	1,000 (454)
Sodium fluoride.....	C.....	1,000 (454)
Sodium hydrosulfide.....	D.....	5,000 (2,270)
Sodium hydroxide.....	C.....	1,000 (454)
Sodium hypochlorite.....	B.....	100 (45.4)
Sodium methylate.....	C.....	1,000 (454)

Sodium nitrite.....	B.....	100 (45.4)
Sodium phosphate, dibasic.....	D.....	5,000 (2,270)
Sodium phosphate, tribasic.....	D.....	5,000 (2,270)
Sodium selenite.....	B.....	100 (45.4)
Strontium chromate.....	A.....	10 (4.54)
Strychnine.....	A.....	10 (4.54)
Styrene.....	C.....	1,000 (454)
Sulfuric acid.....	C.....	1,000 (454)
Sulfur monochloride.....	C.....	1,000 (454)
2,4,5-T acid.....	C.....	1,000 (454)
2,4,5-T amines.....	D.....	5,000 (2,270)
2,4,5-T esters.....	C.....	1,000 (454)
2,4,5-T salts.....	C.....	1,000 (454)
TDE.....	X.....	1 (0.454)
2,4,5-TP acid.....	B.....	100 (45.4)
2,4,5-TP acid esters.....	B.....	100 (45.4)
Tetraethyl lead.....	A.....	10 (4.54)
Tetraethyl pyrophosphate.....	A.....	10 (4.54)
Thallium sulfate.....	B.....	100 (45.4)
Toluene.....	C.....	1,000 (454)
Toxaphene.....	X.....	1 (0.454)
Trichlorfon.....	B.....	100 (45.4)
Trichloroethylene.....	B.....	100 (45.4)
Trichlorophenol.....	A.....	10 (4.54)
Triethanolamine dodecylbenzenesulfonate.	C.....	1,000 (454)
Triethylamine.....	D.....	5,000 (2,270)
Trimethylamine.....	B.....	100 (45.4)
Uranyl acetate.....	B.....	100 (45.4)
Uranyl nitrate.....	B.....	100 (45.4)
Vanadium pentoxide.....	C.....	1,000 (454)
Vanadyl sulfate.....	C.....	1,000 (454)
Vinyl acetate.....	D.....	5,000 (2,270)
Vinylidene chloride.....	B.....	100 (45.4)
Xylene (mixed).....	B.....	100 (45.4)
Xylenol.....	C.....	1,000 (454)
Zinc acetate.....	C.....	1,000 (454)
Zinc ammonium chloride.....	C.....	1,000 (454)
Zinc borate.....	C.....	1,000 (454)
Zinc bromide.....	C.....	1,000 (454)
Zinc carbonate.....	C.....	1,000 (454)
Zinc chloride.....	C.....	1,000 (454)
Zinc cyanide.....	A.....	10 (4.54)
Zinc fluoride.....	C.....	1,000 (454)
Zinc formate.....	C.....	1,000 (454)
Zinc hydrosulfite.....	C.....	1,000 (454)
Zinc nitrate.....	C.....	1,000 (454)
Zinc phenolsulfonate.....	D.....	5,000 (2,270)
Zinc phosphide.....	B.....	100 (45.4)
Zinc silicofluoride.....	D.....	5,000 (2,270)
Zinc sulfate.....	C.....	1,000 (454)
Zirconium nitrate.....	D.....	5,000 (2,270)
Zirconium potassium fluoride....	C.....	1,000 (454)
Zirconium sulfate.....	D.....	5,000 (2,270)
Zirconium tetrachloride.....	D.....	5,000 (2,270)

[50 FR 13513, Apr. 4, 1985, as amended at 51 FR 34547, Sept. 29, 1986;
54 FR 33482, Aug. 14, 1989; 58 FR 35327, June 30, 1993; 60 FR 30937,

June 12, 1995]

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APPENDIX B

Chemical Accident/Incident Recovery Plan (CAIRA Recovery Plan)

**Pueblo Chemical Depot
Pueblo, Colorado**

CHEMICAL ACCIDENT/INCIDENT RECOVERY PLAN

January 2012

PUEBLO CHEMICAL DEPOT
DEPARTMENT OF THE ARMY

UNCLASSIFIED

SUMMARY of CHANGE

Chemical Accident/Incident Recovery Plan

January 2012

This plan -

- **Supersedes:**
 - **Chemical Accident/Incident Recovery Plan, dated September 2010**
- **Revised all Directorate names in accordance with the PCD reorganization**
- **Changed emergency response procedures to IAW updated CAIRA and Contingency plans**
- **Revised approval page**

DEPARTMENT OF THE ARMY
PUEBLO CHEMICAL DEPOT
45825 HIGHWAY 96 EAST
PUEBLO, CO 81006

PCD CHEMICAL ACCIDENT/INCIDENT RECOVERY PLAN

Date: ~~January~~ ~~March~~ 201~~2~~~~4~~

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*This plan supersedes CAIRA Recovery Plan, dated: June 2005

CAIRA Recovery Plan

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1.0 Introduction

The phases of a chemical event are not distinct. There is no single point in time when all response actions terminate and recovery phase actions begin. These actions overlap through much of the event.

Initial actions taken in response to a chemical agent release are described in the Pueblo Chemical Depot (PCD) *Chemical Accident Incident Response and Assistance Plan* (CAIRAP). Actions taken in response to chemical accident/incident (CAI) include eliminating the source of the release, performing lifesaving measures for affected personnel, conducting safety measures for potentially affected personnel, and initiating ~~initial~~ security measures to preclude the exposure of additional personnel.

1.1 Recovery Concept

This Recovery Plan includes reentry and restoration and covers the period of time from when the final actions of the response phase are initiated until the affected area can be re-occupied without protective equipment and there are no short- or long-term health risks. The recovery phase of a CAI commences with the start of operations to restore conditions at or near the CAI site. Prior to the initiation of the recovery phase, the chemical agent is identified, the release of chemical agent to the atmosphere is terminated, all munitions are accounted for, all casualties (if any) are cared for and protective actions are implemented. This plan identifies PCD's recovery procedures and resources for a maximum probable chemical event, more commonly referred to as an operational maximum credible event (MCE).

Recovery team membership will be established during the later stages of response to a CAI. Team members will be drawn from personnel identified in PCD's CAIRA roster, such as personnel assigned to the chemical work crew, the PDS team, the decontamination team, fire and emergency services personnel, equipment operators and other PCD staff as may be required to support recovery operations. An On-Scene Incident Commander (OSIC) will be identified. The OSIC will be responsible for coordinating the response and executing plans in the field.

1.2 Authority

The PCD Installation Commander is designated as the Federal On-Scene Coordinator (OSC) under *Title 40, Protection of Environment Chapter I, Environmental Protection Agency, of the Code of Federal Regulations (CFR) Part 300, National Oil and Hazardous Substances Pollution Contingency Plan*, more commonly referred to as the National Contingency Plan (NCP). The role and general responsibilities of the OSC are delineated under §300.120 of the NCP. PCD recovery operations will be conducted in accordance with Army Regulation (AR) 50-6, AR 385-61, Department of Army (DA) Pamphlet (PAM) 50-6, DA PAM 40-173, 40 CFR 300 and AR 200-1. Restoration operations must be approved by DA and the United States Environmental Protection

Agency (EPA) in coordination with the Colorado Department of Public Health and Environment (CDPHE)-

2.0 Site Information

2.1 Site Description

PCD is located in Pueblo County, in the southeastern portion of the State of Colorado. The city of Pueblo is the county seat. Pueblo County covers 2,377 square miles.

The installation is located east of the city of Pueblo. The Airport Industrial Park is an eastern annexation of the city. Pueblo is approximately 46 miles south-southeast of Colorado Springs and 100 miles south-southeast of Denver. The population centers nearest PCD are a private ranch, the town of Avondale, and the Transportation Technology Center. The depot is located on approximately 23,000 acres of rolling prairie north of the Arkansas River.

The Munitions Storage Area is protected by a double row of fencing. All munitions are stored in covered storage structures called igloos. The approximate minimum distance from an igloo to a depot boundary is 0.43 miles, which corresponds to the distance from any igloo in the northernmost section of the Munitions Storage Area to the northern boundary of the depot.

2.2 Munitions Stored at PCD

At one time, PCD stored 8.3 percent of the original (31,500 tons) unitary chemical munitions stockpile. There are three types of munitions stored at PCD: 155mm and 105mm projectiles, and 4.2-inch mortars. These munitions contain chemical agents HD and HT, which are types of a blister agent also known as mustard.

2.3 Depot Missions

PCD's current missions are the storage of the chemical weapons stockpile and the investigation and remediation of previously contaminated areas of the installation under the 1988 Base Realignment and Closure (BRAC).

3.0 Depot Resources

3.1 Demographics

According to the estimated 2000 census, the population of Pueblo County was 141,472, with 102,121 persons living within the Pueblo city limits.

3.2 Meteorological Data

The climate in the PCD area can be characterized as dry and continental, typified by low humidity, abundant sunshine, low precipitation, and large diurnal temperature fluctuations. Temperatures above 90°F are very common, and temperatures above 100°F occur. Temperatures below 0°F occur occasionally. The average annual precipitation is about 11 inches, most of which falls from mid-spring through mid-fall. Precipitation from May to August usually is caused by thunderstorms. Snowfall may occur from fall through winter.

The wind direction near the Munitions Storage Area follows both a seasonal and a diurnal variation. Strong winds usually blow from the north and west-northwest and are most common in late winter and early spring. Diurnal variations in wind direction occur throughout the year. Usually an up-valley prevailing wind from the east-southeast occurs during the day, and a down-valley wind comes from the west at night.

3.3 Topography

Except for the southeast portion of the depot boundary along the Arkansas River, PCD is characterized by low topographic relief, with terrain sloping generally downward to the east. Because of the absence of distinct topographical features, terrain would have only a minor influence on the dispersion of a chemical agent vapor plume.

The Arkansas River is located several miles south of the Munitions Storage Area. The small water surface area of the river and the terrain elevations are not significant enough to affect general wind patterns, except in the immediate area of the river. Because of its large distance from the Munitions Storage Area, the river is expected to have minimal impact on a chemical plume.

3.4 Community Infrastructure and Resources

A number of civilian communities and facilities are located in the general vicinity of PCD. The communities and/or civilian facilities closest to PCD, their direction, relative to the location of the Munitions Storage Area and the approximate distance from these locations to the center of the Munitions Storage Area are listed in Table 1.

Under all but the most severe chemical events (i.e., events with consequences in excess of the MCE for PCD's current storage mission), the above communities and facilities are unlikely to be affected by a CAI. In the unlikely event that a CAI has off-post consequences, the level of off-post contamination will be highest at the depot boundary and decrease as the distance from the depot boundary increases.

3.5 Natural Resources at PCD

A complete and detailed description of the natural resources contained within PCD's boundary is available in the *Pueblo Chemical Depot Integrated Natural*

Resources Management Plan and Environmental Assessment (INRMP). Jointly published by Depot's Environmental Management Office and the U.S. Fish & Wildlife Service The INRMP provides a multi-year plan for integrating natural resource management with the Depot's military mission.

4.0 Description of Hazard

4.1 Types of Hazards

Chemical agent may be released due to leakage from aging ~~munitions projectiles~~ or ~~an accident while munitions are projectiles~~ being transported to and from igloos or facilities. Hazards could be created by such events as ~~munitions~~ tipping over or forklift accidents. Other hazards may exist in the event of a spill, fire, or explosion. Contamination of personnel is the ultimate concern. Explosion, fire, temperature or wind could lift agent into the atmosphere, thus increasing the distance of the downwind hazard.

4.2 Hazard Evaluation

The main objectives in the event of a spill are to save lives, minimize exposure, and minimize contamination of soils or property. Evaluations should be conducted with the PCD response teams after the CAI spill has been contained, covered with plastic sheeting, and decontaminated if possible, and after personnel in the area have been evacuated. To properly evaluate the CAI, preliminary sampling should be performed to determine the area of concern. Vapor deposition may vary in size ~~and extent~~ and may require numerous sampling efforts. Agent sampling methodology is covered in Section 8.0 of this plan.

5.0 Responsibilities

This section describes the responsibilities of essential PCD staff during recovery operations. These staff members include the Commanding Officer, the Public Affairs Officer, ~~the Director~~ate of Chemical Operations, the ~~Director of~~ Environmental Management ~~Office~~, the Director~~ate~~ of Public Works, ~~the Director of Emergency Services~~, the Director~~ate~~ of Plans, Training, Mobilization and Security, the ~~Director of Occupational Safety and Health~~, ~~Risk Management Office~~ and other staff as may be required during recovery operations.

5.1 Installation Commander

The PCD Commander is the lead Federal agency (Department of Defense - DOD) Installation On-Scene Coordinator (OSC). ~~The Environmental Protection Agency (EPA) is the OSC in the event of a contaminant release to surface water.~~ The Commander is authorized by Headquarters, Department of Army (HQDA) to represent the Army at the scene of the release and has the authority to command and control all response elements. The Commander also possesses the authority granted to the OSC

to coordinate and direct Federal response resources as required to accomplish the mission (Source: 40 CFR Part 300 Appendix F, AR 50-6, and DA PAM 50-6). In the absence of the PCD Commander, the PCD Deputy Commander or other trained staff member~~Chief of Staff~~ shall be designated as alternate OSC.

The mission is planned and executed in three phases: the Readiness Phase, the Response Phase, and the Recovery Phase. ~~This plan focuses primarily on the Recovery Phase, with the recognition that there is considerable overlap with the Response Phase.~~ The CAIRAP covers the Readiness and Response Phases. This plan focuses primarily on the Recovery Phase, with the recognition that there is considerable overlap with the Response Phase. The principal operational goal of the Recovery Phase is to restore conditions at the site to a technically achievable and politically acceptable state that meets environmental regulatory requirements and ensures the health and safety of the surrounding population.

As the OSC, the PCD Commander:

- Directs federal response efforts and coordinates all other federal efforts at the scene of a discharge or release. The OSC may monitor local, tribal, state, or private actions to remove a discharge and may provide technical assistance to local, tribal, state, or responsible party response personnel.
- Directs (as authorized by the NCP at 40 CFR 300.322) all private, state, or federal actions to remove the discharge or to mitigate or prevent the threat of discharges posing or potentially posing a substantial threat to public health or welfare.
- Notifies and consults with the appropriate state and federal agencies.
- Collects information concerning the discharge or release, including the following:
 - source and cause;
 - identification of potentially responsible parties;
 - nature, amount, location, direction, and time of discharge;
 - pathways to human and environmental exposure;
 - potential impact on human health, welfare, and safety and the environment;
 - possible impact on natural resources and property;
 - priorities for protecting human health and welfare and the environment; and
 - estimated cost of the response.
- Coordinates (in the event of a declared Federal disaster) with the Federal Emergency Management Agency (FEMA) federal coordinating officer as appropriate.
- Implements appropriate community relations activities.
- Coordinates with the Agency for Toxic Substances and Disease Registry (ATSDR) as well as local and state health officials regarding possible public health threats.
- Maintains a record of all actions taken.

5.2 Public Affairs Officer

The PCD Public Affairs Officer (PAO) is responsible for dealing with the public or media during a CAI. The PAO evaluates probable reactions from the media and public. Additionally, the PAO, acting under the direction of and in concert with the PCD Commander, is responsible for the following:

- When the chemical event dictates, alert/assemble public affairs staff;
- Initiate notification procedures as outlined on the Emergency Public Affairs Plan;
- Release appropriate information to the news media after review and approval by the Commander;
- As outlined in the Emergency Public Affairs Plan, request to activate the Joint Information Center (JIC), or have PCD JIC team report to the Public Affairs Office to respond to media and citizen inquiries if necessary; and
- Maintain effective relations with local and state officials and appropriate civilian agencies.

5.3 Director~~ate~~ of Chemical Operations

The Director~~ate~~ of Chemical Operations provides immediate CAI field response and oversight to accomplish initial entry, agent containment, decontamination, and initial safety functions. The Director~~ate~~ ensures that all events causing a CAI and all actions taken to control, confine, and neutralize the situation are documented and recorded and provided to the Document Tracking Center (DTC). The Directorate has trained personnel and monitoring equipment that can be utilized in the recovery phase of the operation.

5.4 Director~~ate~~ Environmental Management Office (EMO)

The Director~~ate~~ Environmental Management Office ~~(EMO)~~ provides planning and technical assistance during recovery operations. EMO staff plans the remediation, identifies materials to be used in the remediation process, and provides equipment such as drums, containers, and spill kits. EMO establishes storage or staging areas if needed with concurrence of the Commander, Director of Risk Management Office and Director~~ate~~ of Chemical Operations for recovered material. EMO makes necessary arrangements for long-term storage for larger spills, if practical. EMO provides notification of and coordination with state, federal, and local officials and prepares required environmental reports and provides them to the DTC.

5.5 Director~~ate~~ of Public Works

Personnel from the Directorate of Public Works (DPW) ensure all equipment to be utilized in a CAI is in proper working order and available to support recovery and remediation of contaminated soils and materials. Additionally, the Directorate provides personnel and services to assist in a CAI event. ~~Public Works DPW~~ personnel request and obligate funding necessary to cover recovery operations expenditures.

5.6 Directorate of Emergency Services, Security Operations Branch

During recovery operations, Security Operations Branch personnel are responsible for the following specific actions.

- Assess the situation and determine security requirements.
- If a chemical munition is discovered to be missing or misplaced, initiate the Security Recapture and Recovery Plan, Appendix E, Annex P, of the PCD Physical Security Plan.
- Control entry into the recovery site, seal off roads, and establish traffic control points.
- Perform a running count of personnel entering/exiting recovery site.
- Maintain mutual assistance agreements with local law enforcement agencies.

5.7 Directorate of Emergency Services, Fire and Emergency Services Branch

During recovery operations, PCD Fire and Emergency Services personnel are responsible for the following specific actions:

- Extinguish fires within PCD boundaries. The Fire Chief or Senior Fire Officer is responsible for all fire-fighting operations.
- Recall off-duty fire fighters if necessary to protect PCD while on-duty fire fighters respond to the chemical event/recovery process.
- Assist with the rescue of personnel involved in the recovery process.
- Maintain mutual aid agreements with the Transportation Technology Center, the Pueblo County Rural Fire Department, and the Boone Fire Department to augment installation Fire Department personnel in event of a large chemical event/recovery operation that would require all depot assets to respond to the chemical site.

5.75.8 Quality Assurance Specialists Ammunition Surveillance (QASAS)/ Surveillance Office Branch

The ~~Surveillance Branch, Quality Assurance Specialists (Ammunition Surveillance)~~ (QASAS)/Surveillance Office personnel perform many functions that

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include, but are not limited to assessment of munitions serviceability, implementation, assisting and monitoring of regulatory explosive and chemical safety programs, technical assistance to the Surety Officer as well as to the commander, assignment of decontamination certification, and verification of Chemical Surety Material (CSM) destruction or demilitarization. The Surveillance ~~Office~~Branch will:

- Provide technical aid onsite for CAI investigations.
- Advise on technical matters affecting explosive safety.
- Ensure operations comply with explosive safety regulations.
- Stop unsafe operations where imminent danger is involved.
- ~~Ensure that all explosive/CSM operators are properly trained.~~
- Verify that the proposed method of recovery/decontamination is compatible with current ~~Department of Army (DA)~~ and environmental guidance.
- Verify proper use of Personal Protective Equipment (PPE).
- Ensure overpack containers have a current inspection and test.
- Ensure operations involving handling, storing, shipping, maintenance, and destruction of ammunition and explosives are conducted safely and in compliance with written procedures.
- Ensure transport vehicles used for transportation of ammunition and explosives are safe ~~and~~ suitable for such use and have a current inspection.
- Ensure only CSM qualified personnel, to include the Explosives Ordnance Detachment (EOD), Technical Escort Unit (TEU), and certified DA civilian members of the Initial Response Force (IRF), ~~are authorized to~~ perform the recovery operations of CSM munitions or containers.

5.8 Fire and Emergency Services

~~During recovery operations, PCD Fire and Emergency Services personnel are responsible for the following specific actions:~~

- ~~In the absence of the Commanding Officer, and alternate, and during off duty hours, the Fire Chief or On-Duty Fire Chief will carry out duties of the OSC.~~
- ~~Extinguish fires within PCD boundaries. The Fire Chief or Senior Fire Officer is responsible for all fire fighting operations.~~
- ~~Recall off-duty fire fighters if necessary to protect PCD while on-duty fire fighters respond to the chemical event/recovery process.~~
- ~~Assist with the rescue of personnel involved in the recovery process.~~
- ~~Maintain mutual aid agreements with the Transportation Technology Center, the Pueblo County Rural Fire Department, and the Boone Fire Department to~~

~~augment installation Fire Department personnel in event of a large chemical event/recovery operation that would require all depot assets to respond to the chemical site.~~

5.9 Occupational Safety and Health~~Risk Management~~ Office

During recovery operations, ~~PCD Occupational Safety and Health~~Safety Branch personnel will:

- Monitor procedures in the recovery process and provide technical advice and guidance for the safety of personnel.
- Advise the Commander and Operations Center immediately in the event of an unsafe or potentially unsafe act, procedure, or condition.
- Assist in post-event investigation.
- Make necessary immediate and follow-up safety reports. Reports will not be forwarded without concurrence of the Directorate of Chemical Operations ~~Chief~~ and the Director of Environmental Management ~~Office Chief~~ and the approval of the Commander.

~~Directorate of Plans, Training, Mobilization and Security (DPTMS) personnel support response to, and recovery from, a CAI. As noted below, the Plans and Operations Branch/CSEPP provides the primary support.~~

5.9.1 Directorate of Plans, Training, Mobilization and Security/ Plans and Operations Branch/ CSEPP

Directorate of Plans, Training, Mobilization and Security (DPTMS) personnel support response to, and recovery from, a CAI. As noted below, the Plans and Operations Branch/CSEPP provides the primary support.

The Chemical Stockpile Emergency Preparedness Program (CSEPP) supports recovery field operations from the PCD Operations Center (OC). OC Hazard Analysts produce chemical hazard plots, monitor recovery activities, provide periodic meteorological updates, and document significant field activities during recovery operations.

6.0 Equipment

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Equipment available for use during response to and recovery from a CAI is listed in the PCD *Hazardous Waste Management Plan*, Table 4.2.2-1. Equipment such as a backhoe, a tractor, a grader, cranes, forklifts, dump trucks, and fire department equipment are included in this list. Small items such as shovels or gloves can be checked out from the Depot tool crib. Equipment that becomes contaminated when used to respond to a CAI must be decontaminated, must be marked with **decontamination XXX** tags in accordance with DA Pam 385-61, Chapter 5, and must not be released from government control.

7.0 Health and Safety Aspects

7.1 Policy

PCD **health and** safety policy is to reduce and keep personnel accidents/exposure, as well as material and monetary losses, to a minimum. Procedures outlined in PCD-R 385-507 (Prevention of Heat Stress-Related Illness) will be strictly followed. This policy enhances PCD's capability to respond expeditiously and effectively during recovery operations.

7.2 Health and Safety Program

The U.S. Occupational Safety and Health Administration (OSHA) regulations govern health and safety during hazardous waste operations and during emergency responses to hazardous substance releases (29 CFR 1910.120). Personnel responding to hazardous material incidents, to include recovery operations, may encounter a wide range of physical and chemical hazards. To ensure the safety of recovery personnel, recovery operations will be conducted IAW 29 CFR 1910.120.

7.3 Medical Surveillance Program

In compliance with applicable OSHA requirements and IAW DA PAM 385-61, PCD personnel involved in field recovery operations are medically screened prior to their deployment to the field. The following activities are components in PCD's medical surveillance program:

- Pre-employment medical examinations to establish the individual's state of health, baseline physiological data, and ability to wear personal protective equipment.
- Periodic medical examinations performed annually or more often as determined by the Installation **Competent** Medical Authority.
- Termination examinations conducted at the end of employment.
- Permanent maintenance of all personnel medical records.

7.4 Emergency Medical Care and Treatment

Personnel involved in recovery operations at PCD, at a minimum, receive the following emergency medical training:

- Basic first aid and emergency lifesaving (cardiopulmonary resuscitation - CPR).
- Annual refresher training for first aid and emergency lifesaving (CPR).
- Limited emergency medical procedures

7.5 Health and Safety Training

All personnel who may be involved in the recovery process and who could be exposed to hazardous substances or other health hazards receive health and safety training IAW OSHA requirements as delineated in 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response* (HAZWOPER) (specifically § (q)(6)). PCD personnel meeting the above criteria have completed a 40-hour ~~Hazardous Waste Operations and Emergency Response~~ (HAZWOPER) training course, and complete an 8-hour refresher course annually. Supervisory personnel must complete the HAZWOPER Course and at least 8 additional hours of specialized training on such topics as the Depot's safety and health program, spill containment program, and health hazard monitoring procedures and techniques. Only properly trained and qualified personnel will be involved in recovery operations.

7.6 Standard Operating Safety Procedures

Recovery operations will be conducted IAW applicable existing standing operating procedures (SOPs) and DA Pam 385-61. In the absence of an applicable existing SOP and as requirements dictate, a recovery-specific SOP may be developed prior to initiating extended recovery operations. For emergency recovery, this plan outlines general procedures for the recovery process.

PCD's *Hazardous Waste Management Plan* outlines procedures in event of a hazardous material spill (i.e., not involving mustard agent) and/or emergency. In the event of a toxic chemical spill involving mustard agent in the Munitions Storage Area, the CAIRAP will be followed for response to the CAI.

7.7 Site Safety Plan

No site safety plan is required in the recovery process. Procedures outlined in paragraph 7.6 will be followed.

7.8 Personal Protective Equipment

An assessment will be conducted to determine the required personal protective equipment (PPE) needed prior to the recovery process being implemented. Proper PPE to be worn by individuals responding to the cleanup and recovery will be coordinated through Operations Center with guidance from the Environmental Management Office, Occupational Safety and Health Office, Industrial Hygienist, QASAS/Surveillance Office Branch, and the Fire and Emergency Services Branch. Approval authority for the PPE level is the Commander. All personnel will be properly trained and qualified prior to wearing any PPE.

8.0 Response/Assistance Groups

This section provides a functional description of a Federal Response Center (FRC). The establishment of an FRC is addressed in Appendix III (Federal Response Center) To Annex C (Command Group) to the *U. S. Army Materiel Command Chemical Service Response Force Plan*.

8.1 The Federal Response Center

The Federal Response Center (FRC) plans and makes recommendations for reentry into previously evacuated and potentially contaminated areas. The PCD Deputy OSC will set up a FRC location, depending on the requirements of the CAI. Should, as a result of a CAI, the Federal Response Plan (FRP) or the Service Response Force (SRF) Plan be activated and a Disaster Field Office (DFO) be established, the DFO will serve in place of the FRC.

8.2 Federal Response Center Organization

The FRC is organized into four functional groups: the Operations Group, the Planning Group, the Logistics Group, and the Finance Group.

8.2.1 Operations Group

As the key functional group in the FRC, the Operations Group coordinates and controls the implementation of the site-specific reentry plan. It functions as a small operations center within the FRC to coordinate field operations being conducted to support the reentry process. The Operations Group is responsible for seeing that the approved reentry plan is executed as planned, tracking the effort, gathering data from the field, coordinating resources for operations, and providing the field data to the others as needed.

8.2.2 Planning Group

The Planning Group will develop site-specific reentry plans, including detailed monitoring and sampling plans. For areas or property in which the hazard cannot be

reduced to a satisfactory level, the Planning Group will develop a recommendation for the disposition of the area or property. The Planning Group is responsible for coordinating all plans with the affected state and local jurisdictions. The Planning Group will brief appropriate decision makers and receive their approval before executing any plan. Decision makers will include the PCD Commander, Directors/Chiefs/Managers~~Division/Office chiefs,~~ and other agency heads that are affected by the hazard.

8.2.3 Logistics Group

The FRC Logistics Group will provide the additional resources to assist Depot and, if required, federal response agencies. Resources may include supply, transportation, equipment, maintenance, etc. The Logistics Group will identify sources and initiate resource requests from DOD and other federal agencies.

8.2.4 Finance Group

The Finance Group will manage and document all costs, financial considerations, etc., associated with the incident.

9.0 Sampling Procedures

Environmental sampling is used to determine where agent has been released and deposited so that it may be removed, destroyed, or quarantined, and to determine whether and when people may safely return to their workplaces or homes after an evacuation. In areas where no contamination is found, restrictions will be lifted and arrangements will be made for evacuee return as soon as possible. Decision-makers and planners should understand that obtaining accurate and reliable sample results is paramount. Sampling must be conducted in accordance with all applicable federal, state, and county regulatory standards.

9.1 Objective

The objective of this sampling procedures section is to present a method by which an accident-specific sampling plan can be generated when required. Having an approved sampling methodology in place will reduce the preparation time of an accident-specific plan.

9.2 PCD Protocols

Depending on the circumstances, the downwind hazard caused by a CAI can change dramatically. Factors contributing to the distance of the downwind hazard associated with a particular CAI are:

CAIRA Recovery Plan

- *Type of Agent Released:* PCD stores vesicant, or blistering, agents HD and HT. Different types of chemical agents have differing vapor pressures. The more volatile the agent, the greater the distance associated with the downwind hazard.
- *Configuration of the munitions/containers:* Agent can be released from bulk containers or munitions casings. Agent can be released from the munitions casing either by failure of the casing or by detonation. PCD has only munitions; there is no bulk storage.
- *Type of Release:* Chemical agents can be released during a spill, fire or explosion. The amount of heat or explosive energy available to vaporize agent and/or generate aerosols and lift a plume into the atmosphere affects the distance of the downwind hazard.
- *Duration of Release:* For agent releases involving fires and evaporative emissions from puddles, the quantity of agent released to the atmosphere depends on the duration of the release. The longer the duration, the more agent released, and the more agent released, the greater the downwind hazard.
- *Meteorological Conditions During the Release:* The wind direction, wind speed, humidity, and mixing height all contribute to the distance of the downwind hazard. Differing meteorological conditions can have vastly differing effects on the distance associated with the downwind hazard.
- *Size of the Contaminated Area (for Spills):* When the CAI involves a spill, the larger the area of the spill, the greater the amount of agent released into the air and the greater the downwind hazard distance.

The downwind hazard factors require the following assumptions to facilitate development of a sampling plan:

- *Affected Area:* The affected area is contaminated either directly by liquid agent or indirectly by vapor and aerosol/particulate deposition. The area contaminated by liquid deposition will be readily discernible, while the area potentially contaminated by vapor and aerosol/particulate deposition will not. The area affected by vapor and aerosol/particulate deposition will be generally defined by the plume path projections generated by dispersion modeling. Sampling teams, deployed to the field, will approximate the affected area and the distance of the downwind hazard through sampling results.
- *Liquid Deposition:* Liquid contamination is not expected outside the Munitions Storage Area. Areas contaminated by liquid deposition will be known because they are located at the source of the agent release. These areas will have a very high level of contamination. Areas exposed to liquid deposition will be sampled to determine the nature and extent of contamination, to verify the effectiveness of removal procedures, and to determine the requirements for further remediation. The sample densities for areas contaminated by liquid deposition should be greater than that for areas potentially contaminated by vapor deposition because:
 - 1) The boundaries of the area contaminated by liquid are well-defined.

- 2) The level of contamination is far greater in areas contaminated by liquid deposition than in areas potentially contaminated by vapor deposition.
 - 3) The area contaminated by liquid deposition will be smaller than the area potentially contaminated by vapor deposition.
- *Vapor Deposition:* The areas contaminated by vapor deposition may be very large, and will require sampling of various environmental (and architectural) media. The purpose of this sampling is to determine the locations (hot spots), and levels of contamination caused by vapor deposition prior to any remediation efforts. The sample density for areas potentially contaminated by vapor deposition should be less than for areas contaminated by liquid deposition because:
 - 1) The boundaries of the area contaminated by vapor are not well-defined.
 - 2) The level of contamination caused by vapor deposition is less than that caused by liquid deposition.
 - 3) The size of the area potentially contaminated by vapor deposition may be larger by several orders of magnitude compared to the area contaminated by liquid deposition.
 - *Surface Contamination:* If possible, sampling of environmental media following a CAI should occur in a timeframe such that migration of agents from the surfaces onto which they were deposited into the subsurface strata will not have occurred.
 - *Sample Priority:* Sampling efforts will be prioritized depending on the extent/type of the CAI.

9.3 Sample Locations and Densities

The following procedure is to be used to determine where and how many samples should be taken following a CAI.

1. *Determine the Boundaries of the Affected Area:* Determine boundaries by air monitoring results, field indicators (dead animals or unexplained discolored vegetation), and/or plume transit models. These locations are to be plotted on a map generated by the D2PUFF atmospheric dispersion model.
2. *Determine areas of vapor and liquid deposition:* Categorize regions within the actual affected area by the type of deposition that has occurred. Areas of liquid deposition will be those where agent spilled onto the ground from a leaking munition, or the area surrounding the point of detonation or burning of ammunition.

3. *Determine Differing Land Uses:* Within the actual affected area identify and categorize areas based on land use.
4. *Determine size of differing land use area:* Determine the size of each land use class in acres.
5. *Determine number of samples:* Use Table 2 (see Appendix A) to determine the sample density based on the land use and the method of contamination deposited. Divide the area for each land use by the appropriate sample density.
6. *Determine sample locations and grid spacing:* Grid spacing for each differing area of land use within the actual affected area can be determined by using Table 3 (see Appendix A). Find the number of samples in column 2 that is closest to the number of samples calculated in Step 5. Then for each land use area, determine the hexagonal grid spacing for each sample point.

The sampling teams will ensure that the sample points are not in the shadow of any objects in the prevailing wind direction at the time of the CAI. The area should be open to the sun, precipitation, and wind. Avoid areas sheltered by vegetation, landscape, and manmade structures. The goal is to sample from a location open to particulates settling out from the air. The actual sample collection point will be as close as possible to the proposed location.

The immediate area from which the sample is being taken and other pertinent sample information will be recorded in a logbook. The sampling points will be located using a geographic positioning system (GPS) or best possible map description and recorded.

The following is an example of how to determine a sample location and sample density.

For the purposes of this example several assumptions will be made:

1. The contaminated area is a result of vapor disposition.
2. The identity and categorization of land use is cultivated agricultural soil.
3. The size of the sampling area is a circle with a radius of 500 feet (or 1000 feet diameter). The area (A) of this circle is πr^2 or 3.14 times 250,000 or 785,398 square feet.

Steps to determine sample location and sample density:

1. On Table 2, find the maximum sample density for cultivated agricultural soil under the vapor deposition column. This number is 90,000.
2. To determine the number of samples, divide the area (785,398 sq. ft.) by 90,000. This equals 8.73.

3. On Table 3 (see Appendix A, Number of Samples Column), select the number of samples that is closest to the number of samples calculated in step 2 (8.73). That number is 7. So the number of samples to be taken within the 500-foot radius circle is seven (7).
4. Next, on Table 3, refer to the Distance Between Adjacent Sample Points column and find the figure that corresponds to the number of samples (7). The figure is 0.87r. The distance between adjacent sample points is 0.87r or 0.87 times 500 feet, which is 435 feet.
5. Then refer to the Distance Between Successive Rows column and find the function that corresponds to the number of samples (7). The distance between successive rows is 0.75r times or 0.75 X 500 feet, which is 375 feet.

9.4 Sampling Methodology

9.4.1 Continuous Air Monitoring

Continuous air monitoring does not require the collection of a sample for laboratory analysis (except when Depot Area Air Monitoring System (DAAMS) tubes are used). An air monitoring instrument specific to the agents being measured is carried on or set up near a site, and an air stream is passed through the instrument, analyzed, and recorded instantaneously or on a continuing basis. Monitoring operations will usually run from a minimum of 18 minutes to 8 hours. Methodologies for air monitoring include DAAMS tubes and the Miniature Continuous Air Monitoring System (MINICAMS). The DAAMS system employs a solid sorbent tube through which sampled air is drawn. The agent is absorbed on the sorbent and is subsequently analyzed in the laboratory by thermal desorption into a gas chromatograph equipped with a flame photometric detector. The MINICAMS system is an automated gas chromatograph that first collects agent on a solid sorbent tube and then thermally desorbs agent into a separation column for analysis. These methods are used primarily as screening techniques prior to a full-scale field investigation.

9.4.2 Water Sampling Methods

Agent in water may result in a surface film or sink to the bottom. When a surface film is suspected or visible, the water surface should be sampled. Otherwise, a water sample should be taken near the bottom of the body of water. All water sample containers will be 40 ml wide-mouth glass vials with a Teflon®-lined cap and septum.

9.4.2.1 *Surface Water Sampling*

Surface-water samples should be collected by lowering an open, pre-cleaned (triple hexane rinsed) glass sample vial horizontally into the water at the designated sample collection point. As water begins to run into the vial, slowly turn the vial upright, keeping the lip just under the surface so that only surface water is collected. Ensure that there are no air bubbles in the sample vial. Lift the vial out of the water, wipe the outside with a disposable wiping cloth (paper towels) and cap the vial. Label the vial, put the vial in a self-sealable plastic bag, and put the container in an ice chest containing ice (to keep the sample at about 4° C). Disposable wiping cloth will be placed in plastic bag for disposition. Sample collection data (e.g., location, date, time, sampler) should be entered in a logbook and on a chain-of-custody form (DD1222).

9.4.2.2 *Subsurface Water Sampling*

Water near the bottom of the body of water should be sampled by lowering a sealed vial to the required depth, removing the vial cap, allowing the vial to fill and removing the vial upright from the water. Transfer the subsurface sample into a pre-cleaned (triple hexane-rinsed) glass vial, cap it, label it, and place it into a self-sealing plastic bag and into an ice chest containing ice (to keep the sample at about 4°C). Initial collection vials will be placed in a plastic bag for disposition. The sample collection data should be entered into the field logbook and on the chain-of-custody form (DD1222).

9.4.3 **Soil Sampling**

The first sampling point will be at the center of the circular area. The next point will be to either side of the center point until the center row is complete. Samples will then be taken along the rows on both sides of the center row until the entire area is sampled.

1. At each sampling point measure off a square 50 centimeters (cm) on a side. The soil to be sampled will all come from a one (1) centimeter depth within this area for this particular point.
2. Mark the ground at the corners of the square with the trowel to serve as reference points.
3. Remove any vegetation, debris, and gravel-size soil from the square with the trowel.
4. Scrape the soil from the edges of the square into the middle forming a pile. Be careful not to exceed sampling a depth greater than 1 cm.
5. Scrape up samples with a trowel and put directly into a pre-labeled self-sealing plastic bag.
6. Fill the pre-labeled bags ¼ full and seal tightly to eliminate loss of volatiles.

8. Place the bags into an ice chest (to keep the sample at about 4°C). Sample collection data should be entered in a logbook and on a chain-of-custody form (DD1222).
9. Identify one corner of all soil sample locations on the ground with a wooden stake and florescent flag pin.

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9.4.4 Equipment Needed

The following list of equipment and supplies are typically required to conduct field sampling activities.

- a. Clean (triple water rinsed) stainless-steel hand trowel or spoon.
- b. Measuring tape.
- c. 40 ml glass vials with Teflon®-lined cap/septum for water samples.
- d. Self-sealing plastic (Ziploc™) freezer bags (1 quart size) for water vials.
- e. Self-sealing plastic (Ziploc™) freezer bags (1 quart size) for soil samples.
- f. Sample labels.
- g. Waterproof marker.
- h. Tape.
- i. Disposable wipes/towels.
- j. Ice and ice cooler/ice chest for sample storage.
- k. Personal Protective Equipment will be Level A Protective Ensemble or as deemed appropriate by the Risk Management Office Division.
- l. Wooden stakes.
- m. Caution tape.
- n. Bleach for cleaning sample equipment.
- o. Waste containers with hazardous waste labels to collect contaminated samples/equipment.
- p. Plastic bags to collect sampling waste.
- q. Chain of Custody Forms (DD1222).
- r. Logbook.
- s. 500-gram scale.
- t. 50-cm x 50-cm (2500cm²) template.
- u. GPS and/or map

10.0 Spill Recovery Operations

The recovery phase of a CAI begins during the response phase, after the injured and all personnel at risk have been removed to a location of safety and the accident site has been stabilized (leaking munitions have been covered, and potentially compromised munitions have been rendered safe). The recovery phase continues until the affected area has been returned to a state where it may be re-occupied without protective clothing and the risk to human life and health has been eliminated. The principle objective of recovery is removal of the hazard to a level where unrestricted access is permitted and the resumption of use of the affected area is accomplished.

10.1 Notifications

Notifications are established in accordance with the PCD CAIRAP. Roles and responsibilities for notifications are also outlined in the CAIRAP and the Operations Center Notification Matrix and Check Lists. Response teams will coordinate with OC to monitor the recovery operations and progress. The OC Environmental Representative will prepare the [National Response Center Report \(found and submitted on-line at http://www.nrc.uscg.mil/nrchp.html\)](http://www.nrc.uscg.mil/nrchp.html) and the Spill Report. Other OC representatives will prepare other required reports.

10.2 Small Spills (110 Gallons or Less)

The most probable event at PCD during routine operations is a spill during movement or transportation of chemical rounds from one igloo to another, investigating leaking munitions, or movement for possible reconfiguration. At any one time the maximum quantity that can be transported is 4 pallets (192 rounds) of 4.2-in mortars, which is less than 110 gallons of agent.

10.3 Large Spills (More Than 110 Gallons)

In the event of a large spill or explosion where a large area has been contaminated and PCD does not have the capability to efficiently recover for reentry, PCD will follow the procedures outlined in the CAIRAP for requesting assistance. Assistance requested may include EOD support, an Augmentation Force to support activities, medical assistance through Medical Activity Command (MEDDAC), and/or activation of a Service Response Force (SRF).

When practical, steps shall be taken to cover the affected areas with an agent-resistant liner and to surround the spill with absorbent material such as pigs. Control of access (e.g., placement of roadblocks or barricades) into the affected area must be established in order to prevent risk of further exposure to human health or the environment. Notification procedures in accordance with the CAIRAP will be implemented.

10.4 Remedial Operations

The primary goal of remedial operations is to return the CAI site to technically achievable and acceptable conditions. Cleanup standards will be determined in accordance with applicable federal, state, and local regulations and in coordination with the proper authorities.

10.5 Removal of Contaminated Soil and Debris

After hazard evaluations have been determined and sampling of the affected area has been completed, the decontamination and support teams can begin removal and containerization of contaminated soils and other materials associated with cleanup operations, such as PPE, equipment, or decontamination water. Equipment such as shovels or rakes will be available from the PCD tool crib for small spills. Heavy equipment such as a front-end loader, backhoe, or dump truck is available for larger spills. Contaminated concrete will be decontaminated using a High Test Hypochlorite (HTH) or bleach solution. As long as the concrete can be decontaminated such that monitoring results are negative for agent, it will not be removed. All removal operations procedures will be in accordance with PCD SOP *PU-0000-M-302, Personnel Decontamination Station Operations*.

10.6 Transportation and Storage

The containerized (drummed) material will be transported in accordance with PCD SOP *PU-0000-M-302, Personnel Decontamination Station Operations*. If the amount of contaminated soil does not exceed permit requirements, the material will be stored in a permitted igloo as directed by EMO. If quantities exceed permit requirements, EMO will request an emergency storage permit from the state. EMO will, with concurrence from the State of Colorado, EPA, the OSCRF Commander, Risk Management Office, Risk Management Division, and the Directorate of Chemical Operations, Division, and the Fire and Emergency Services Branch identify storage or staging area for temporary storage of the drums until an appropriate site can be permitted for long-term storage. EMO will coordinate the request with appropriate federal, state, and local authorities and obtain all required permits.

10.7 Confirmation Sampling/Analysis

Confirmation sampling of the area and sample analysis are performed by Chemical Division personnel. Sample analysis is accomplished using multiple methodologies, such as DAAMS (SOP *PU-0000-W-465, Toxic Chemical Laboratory Analytical Operating Procedures*), or MINICAMS (SOP *PU-0000-R-491, Near Real Time Monitoring Systems Technical Operating Procedures, Operation #2*).

11.0 Completion Report

Following completion of the recovery operations, EMO will prepare a completion report in coordination with the other PCD divisions and offices, to include a summary of the CAI, actions taken, sampling events and results, and conclusions.

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APPENDIX A – TablesTable 1: Prioritization of Sample Gathering and Sample Density Based on Land Use

Priority	Land Use	Media Contaminated	Type of Sample to be Collected	Maximum Sample Density (ft ² /sample)	
				Liquid Deposition	Vapor Deposition
1	Residential & Commercial	Soil Water	Surface Surface	40 40	45,000 45,000
2	Agricultural (Cultivated or Range Land)	Soil Water	Surface Surface, Subsurface	80 80	90,000 90,000
3	Undeveloped	Soil	Surface	120	135,000

Table 2: Number of Samples & Sample Location Spacing Based on a Hexagonal Grid Pattern

N	Number of Samples (a)	Distance Between Adjacent Sample Points (b)	Distance Between Successive Rows (c)
1	7	.87r	.75r
2	19	.48r	.42r
3	37	.30r	.26r
4	61	.24r	.21r
5	91	.19r	.16r
6	127	.16r	.14r
7	169	.14r	.12r
8	217	.12r	.11r
9	271	.11r	.095r
10	331	.10r	.086r
11	397	.09r	.079r
12	469	.08r	.072r
13	547	.077r	.067r

Notes:

r = radius

a Number of Samples = $1 + 2n + 2(n+1) + 2(n+2) + 2(n+3) + \dots + 2(n+n)$

b Distance = $1/n$

c Distance = .886s

APPENDIX B - Acronyms

~~ATSDR~~ ~~Agency for Toxic Substances and Disease Registry~~

AMC-CSRFP	Army Materiel Command Chemical Service Response Force Plan
AMC-R	Army Materiel Command Regulation
AOC	Army Operations Center
AR	Army Regulation
ATSDR	Agency for Toxic Substances and Disease Registry
C	Celsius
CAI	Chemical Accident/Incident
CAIRA	Chemical Accident/Incident Response and Assistance
CAIRAP	Chemical Accident/Incident Response and Assistance Plan
CAM	Chemical Agent Monitor
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cm	Centimeter
CRS	Colorado Revised Statutes
CSEPP	Chemical Stockpile Emergency Preparedness Program
CSM	Chemical Surety Materiel
DA	Department of the Army
DAAMS	Depot Area Air Monitoring System
DA PAM	Department of the Army Pamphlet
DDESB	Department of Defense Explosive Safety Board
DES	Directorate of Emergency Services
DFO	Disaster Field Office
DHHS	Department of Health and Human Services
DOD	Department of Defense
DODD	Department of Defense Directive
<u>DPW</u>	<u>Directorate of Public Works</u>
DTC	Document Tracking Center
DPW	Directorate of Public Works
EMO	Environmental Management Office
EOD	Explosive Ordnance Detachment
EPA	U. S. Environmental Protection Agency
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FM	Field Manual
FRC	Federal Response Center

CAIRA Recovery Plan

FRP	Federal Response Plan
ft ²	square feet
GPS	Global Positioning System
HAZMAT	Hazardous Materials
HAZWOPER	Hazardous Waste Operations
HD	Distilled Mustard or bis (2-chloroethyl) sulfide
HT	Mixture of HD and bis[2-(2-chloroethylthio)ethyl]ether
HTH	High Test Hypochlorite
HQDA	Headquarters, Department of the Army
IAW	In Accordance With
INRMP	Integrated Natural Resources Management Plan
IRF	Initial Response Force
JIC	Joint Information Center
LEPC	Local Emergency Planning Committee
MCE	Maximum Credible Event
MEDDAC	U. S. Army Medical Department Activity
MINICAMS	Miniature Continuous Air Monitoring System
ml	milliliter(s)
MSDS	Material Safety Data Sheet
NCP	National Contingency Plan
NRC	National Response Center
NRT	National Response Team
OC	Operations Center
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
PA	Public Affairs
PAO	Public Affairs Officer
PCD	Pueblo Chemical Depot
PDS	Personnel Decontamination Station
PL	Public Law
PPE	Personal Protective Equipment
PWO	Public Works Office
QASAS	Quality Assurance Specialist Ammunition Surveillance
RCRA	Resource Conservation and Recovery Act
RCP	Regional Contingency Plan

RPM	Remedial Project Manager
RRT	Regional Response Team
RTAP	Real-Time Analytical Platform
SARA	Superfund Amendments and Reauthorization Act of 1986
SERC	State Emergency Response Commission
SOP	Standing Operating Procedure
SRF	Service Response Force
TB	Technical Bulletin
TEU	Technical Escort Unit
TM	Technical Manual
USACE	US Army Corps of Engineers

APPENDIX C - References

29 CFR 1910.120, Hazardous Waste Operations and Emergency Response

40 CFR 300, Subject: National Oil and Hazardous Substance Pollution Contingency Plan; Final Rule

AMC Chemical Service Response Force Plan

AR 50-6, Chemical Surety

AR 200-1, Environmental Protection and Enhancement

Chemical Accident Incident Response and Assistance Plan (CAIRAP)

DA PAM 40-173, Occupational Health Guidelines for the Evaluation and Control of Occupational Exposure to Mustard Agents H, HD and HT

DA PAM 50-6, Chemical Accident or Incident Response and Assistance (CAIRA) Operations

DA PAM 385-61, Toxic Chemical Agent Safety Standards

TM 3-4230-209-10, Operator's Manual: Decontaminating Apparatus: Power-Driven, Skid-Mounted, 500 Gallon, M12A1 (NSN 4230-00-926-9488)

TM 3-4230-209-12, Operator's and Organizational Maintenance Manual: Decontaminating Apparatus, Power-Driven, Skid-Mounted, Multipurpose, Nonintegral, 500 Gallon, ABC M12A1

TM 3-4240-346-20&P, Unit Maintenance Manual for Chemical Biological Mask: Field M40A1

PCD Hazardous Waste Management Plan

PCD Integrated Natural Resources Management Plan and Environmental Assessment

PCD Physical Security Plan

PCD R-385-507, Prevention of Heat Stress-Related Illness

PCD SOP PU-0000-M-302, Personnel Decontamination Station Operations

PCD SOP PU-0000-W-465, Toxic Chemical Laboratory Analytical Operating Procedures

PCD SOP PU-0000-R-491, Real Time Monitoring Systems Technical Operating Procedures

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APPENDIX D - Colorado State Authorities

The following summary of relevant statutes from the State of Colorado Revised Statutes is extracted from the EPA's *Region 8 Regional Contingency Plan*

1. State Legal Authorities Related to Spill Response

- (a) Colorado Revised Statutes (CRS), Sections 25-8-601, 605, 606, and 608 state, in part, that "any person engaged in any operations...which results in a spill or discharge of oil or other substance which may cause pollution of the waters of the state...must notify the Division (Water Quality Division of the Department of Health) of such discharge. The EPA is the OSC for spills which affect waters of the state. Any person who fails to notify the Division shall be punished by a fine of not more than \$10,000 or by imprisonment...for not more than one year or by both. If the Division determines...that there exists a violation...the Division may issue a cease and desist order. The Division may issue orders to any person to clean up any material which...has accidentally or purposely been dumped, spilled, or otherwise deposited in or near state waters which may pollute them. Any person who violates any provisions of any permit...cease and desist order or clean up order shall be subject to a civil penalty of not more than \$10,000 per day for each day during which such violation occurs."
- (b) CRS, Sections 28-2-103 and 105 state, in part, that "Disaster means occurrence or eminent threat of wide spread or severe damage, injury...oil spill or other water contamination requiring emergency action to avoid danger or damage.

In addition to any other powers conferred upon the Governor by law, the Governor may utilize all available resources of the state government as reasonably necessary to cope with disaster emergency...The Division (Emergency Services Division of the Department of Military Affairs) shall cooperate with the federal government and any public or private agency or entity in achieving any purpose of this article and implement programs for disaster provisions, preparation, and response and recovery."

- (c) CRS, 1967 Supp-Sec.5, 100-2-29 and Sec. 6, 100-30 state, in part, that "It is the duty of the State Inspector of Oils, whenever the Inspector has reasonable and probable grounds to believe that a hazardous or dangerous condition exists, due to deterioration of fuel produce storage and piping facilities which are endangering human and environmental life, to...order the person or persons responsible for the hazardous or dangerous condition to take corrective measures within a reasonable period of time to alleviate or eliminate the conditions, and if the measures are not taken within such time, the Inspector may have to alleviate or eliminate the same. Plans for all installations utilizing liquid fuel products and storage containers or...over 1500

gallons... capacity shall be submitted to the State Inspector of Oil for his approval before construction thereof begins. The plan shall include: provisions for extended protection against underground leaks due to corrosion...and high groundwater tables, containment of liquid or fuel in the event of damage to fuel dispensers and intended pumping, and provisions for safety of human and environmental life.”

- (d) CRS, Sec. 33-6-104 states, in part, that “the Division of Wildlife or any officer directed by such division and charged with the enforcement of this title may bring and maintain a civil action to recover possession of any wildlife taken, killed, injured...or recover the value thereof against any person in possession or exercising control over the same.” Sec 33-6-118 states, in part, that “unless permitted by law or by the Division of Wildlife it is unlawful for any person to use toxicants, poisons, drugs, for the purpose of having...wounding, injuring, or harassing any wildlife...any person who violates any of the provisions of this section is guilty of a misdemeanor, and, upon conviction thereof, shall be punished as provided for in Sec. 33-6-127.”

APPENDIX E – Notifications/Contacts Lists

In the unlikely event of a CAI, PCD is responsible for notifying local officials, as well as state and federal agencies. In addition, the Commander, as the Federal On-Scene Coordinator, maintains close coordination with officials at the three levels of government. To facilitate rapid and regular coordination the following contact information must be maintained and periodically verified for accuracy.

1. Local Official Notification/Contacts List

Pueblo County Government AREA CODE 719

Board of Commissioners	583-6537
Department of Emergency Management	583-6200
County Attorney	583-6630
County Coroner	543-4016
County Sheriff	583-6125
Rural Fire	948-4646

Pueblo City Government AREA CODE 719

City Council	584-0800
City Manager	545-0800
Airport Administration	948-3355
Fire Department	542-1352
Police Department	549-1200
Transportation Department	545-5840

Boone City Government AREA CODE 719

Mayor	947-3886
Volunteer Fire Department	947-3311

Health and Medical AREA CODE 719

City/County Health Department (Director)	583-4513
Parkview Episcopal Medical Center	584-4000
St. Mary-Corwin Regional Medical Center	560-4000
American Medical Response (Ambulance)	545-1229

2. State Of Colorado and EPA Notification/Contacts List

The following information on notification of Colorado State agencies is extracted (with minor modification) from the Environmental Protection Agency (EPA), *Region 8 Regional Contingency Plan (1999), Annexes I & II*.

PRIMARY SPILL NOTIFICATION #: (303) 756-4455
 Alternate – Business Hours #: (303) 692-3020
 Alternate – 24-Hour State Patrol #: (303) 239-4501
Toll Free 24 Hour (877) 518-5608

EPA – Region 8 (800) 227-8917
National Response Center (800) 424-8802

REMOVAL ACTIONS FROM ALL MEDIA (WATER, AIR, GROUNDWATER, SOIL):

Contact: Colorado Dept. of Public Health and the Environment (CDPHE)
 24-Hour #: (303) 756-4455

If unable to contact CDPHE, call the Department of Local Affairs, Office of Emergency Management's 24-hour number: (303) 279-8855.

EMERGENCIES INVOLVING HAZARDOUS CHEMICALS

FIRST RESPONSE RELATED ACTIVITIES

(This is a contact for the OSC ~~call~~ to obtain site-specific information, and to advise the state of an OSC on-site investigation.)

STATE CONTACT: Colorado Dept. of Public Health and the Environment (CDPHE)

BUSINESS HOURS #: (303) 756-4455

24-HOUR #: ~~(877) 303 518-5608~~ 756-4455

**U.S. ARMY CHEMICAL MATERIALS AGENCY
PUEBLO CHEMICAL DEPOT
CHEMICAL ACCIDENT/INCIDENT RECOVERY PLAN**

January 2012

Approval Page

Submitted by:

Environmental Engineer, Environmental Management Office	Date
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Reviewed by:

Director, Directorate of Chemical Operations	Date
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Director, Directorate of Emergency Services	Date
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Director, Directorate of Plans, Training, Mobilization and Security	Date
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Manager, Risk Management Office	Date
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Public Affairs Officer	Date
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Recommended for Approval by:

Chief Director, Environmental Management Division	Date
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Approval:

Commander, Pueblo Chemical Depot	Date
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APPENDIX C

Chemical Agent Acute Exposure Guideline Levels (AEGLs)

**Pueblo Chemical Depot
Pueblo, Colorado**

Table 1. Chemical Agent Air Standards Status Table: Existing and Proposed Standards as of 4/5/03 POC: V. Hauschild

Media- AIR	Standard Name	Population	Exposure Scenario	H/H/D/HT	GA (Tabun)	GB (Sarin)	GD/GF	VX	Lewisite	Notes/ Status
Airborne Exposure Limits (AELs) mg/m ³	IDLH (Immediately Dangerous to Life/health)	civilian/ DoD worker	1 time exposure	NA	0.2 ^{a,c}	0.2 ^{a,c}	0.06 ^{a,c}	0.02 ^{a,c}	NA	Existing criteria in R.U./GREEN are current listed in 1990 and 97 DA pams – the IDLH, WPL, STEL*, and GPL values in BLACK are from Final Army technical re-evaluation reports and are currently being staffed (Feb April 03) in the draft Jan 03 revision of DA pams 40-8 and 40-173 (RED values show where changes are to existing values) – *STEL is new proposed standard not previously established NOTE: CDC had proposed modifications to it new nerve agents AELs (in BLACK) in the Federal Register in Jan 8 2002, 67 FR: 834-90 However, the Army non-concurred with the CD modifications (see reference k). As of 4/03 n final CDC position has been documented: - No re-evaluation of Lewisite has been performed. Lewisite values are based on detection limits; no true IDLH exists (AR 385-Table 2-2, 2-3)
	*STEL (Short Term Exposure Limit)	civilian/DoD worker	occasional 15-minute exposure (4x ea day)	0.003 ^{d,i}	0.0004 ^{e,h}	0.0004 ^{e,h}	0.0002 ^{e,h}	0.00004 ^{f,h}	NA	
	WPL (Worker Population Limit)	civilian/DoD worker	8-hr, daily/ 30-yr. Time-weighted average (2-hr, 4-hr, 6-hr, 8-hr, 10-hr, 12-hr, 14-hr, 16-hr, 18-hr, 20-hr, 22-hr, 24-hr, 26-hr, 28-hr, 30-hr, 32-hr, 34-hr, 36-hr, 38-hr, 40-hr, 42-hr, 44-hr, 46-hr, 48-hr, 50-hr, 52-hr, 54-hr, 56-hr, 58-hr, 60-hr, 62-hr, 64-hr, 66-hr, 68-hr, 70-hr, 72-hr, 74-hr, 76-hr, 78-hr, 80-hr, 82-hr, 84-hr, 86-hr, 88-hr, 90-hr, 92-hr, 94-hr, 96-hr, 98-hr, 100-hr)	0.003 ^{b,h,g}	0.0001 ^{a,c,g}	0.0001 ^{a,c,g}	0.00003 ^{a,c,g}	0.00001 ^{a,c,g}	0.003 ^c	
	GPL (General Population Limit)	civilian population	24-hr/daily, lifetime time-weighted avg.	0.00002 ^{d,i}	0.000003 ^{e,h}	0.000003 ^{e,h}	0.000001 ^{e,h}	0.0000003 ^{f,h}	0.003 ^c	
NEC/EPAs	Acute Exposure Guideline Levels	Emergency/ Accident scenario	1 time exposure :	HD	GA	GB	GD/GF	VX	L	see ref L Final Sulfur Mustard AEGLs have been published by National Research Council (NRC) Committee on Toxicology (COT) (be available on www.nap.edu) as of 4/03: (Final values include some minor changes those that were initially proposed in the Federal Register in 2000) (no changes to values in this Table – Sept 02 Table had final values) see ref L Nerve agent (G-Agents, VX) AEGLs have been published by National Research Council (NRC) Committee on Toxicology (COT) (to be available on www.nap.edu of 4/03: (Final values include some minor changes to VX AEGLs from those initial proposed in the Federal Register in May (no changes to values in this Table – Sept 02 Table had final values) CHPMM-recommended values for certain Force Health Protection applications - Based on AEGLs, plus a MEG for 24-hr exposures (ref m). Considered conservat but appropriate for diverse military populat with some genetically susceptible individu; just as in general population – However, additional (military specific) interim toxicity criteria are also available for certain applications (see references n, o)
	AEGL - LEVEL 1	Potential minor discomfort or noticeable effects; reversible	10 MIN: 30 MIN: 1 HR: 4 HR: 8 HR:	0.40 0.13 0.067 0.017 0.0083	0.0069 0.0040 0.0028 0.0014 0.0010	0.0069 0.0040 0.0028 0.0014 0.0010	0.0035 0.0020 0.0014 0.00070 0.00050	0.00057 0.00033 0.00017 0.00010 0.000071	NA " " " "	
	AEGL - LEVEL 2	Level where more obvious effects begin; Potentially impacting functional abilities or ability to Escape; Potential delayed recovery	10 MIN: 30 MIN: 1 HR: 4 HR: 8 HR:	0.60 0.20 0.10 0.025 0.013	0.087 0.050 0.035 0.017 0.013	0.087 0.050 0.035 0.017 0.013	0.044 0.025 0.018 0.0085 0.0065	0.0072 0.0042 0.0029 0.0015 0.00104	" " " " "	
	AEGL - LEVEL 3	Life threatening; Level of potential initial fatalities	10 MIN: 30 MIN: 1 HR: 4 HR: 8 HR:	3.9 2.7 2.1 0.53 0.27	0.76 0.38 0.26 0.14 0.10	0.38 0.19 0.13 0.070 0.051	0.38 0.19 0.13 0.070 0.051	0.029 0.015 0.010 0.0052 0.0038	" " " " "	
MEGS mg/m ³	Military Exposure Guidelines (Air)	Effect level	Exposure duration	HD	GA	GB	GD/GF	VX	L	CHPMM-recommended values for certain Force Health Protection applications - Based on AEGLs, plus a MEG for 24-hr exposures (ref m). Considered conservat but appropriate for diverse military populat with some genetically susceptible individu; just as in general population – However, additional (military specific) interim toxicity criteria are also available for certain applications (see references n, o)
	** NOTE: refer to AEGLs above; for durations > 24 hrs additional guidelines are provided:	None-minimal None-minimal Significant Severe	1time -24 hour	(0.003)	(0.0003)	(0.0003)	(0.0002)	(0.000027)	NA 0.003 NA	
See AEGL 3 durations and associated values above values										
See AEGL 3 durations and associated values above values										
0.003										

APPENDIX D
(ANNEXES P AND R OF CAIRA PLAN)

**Contamination Control and
Remedial Actions**

**Pueblo Chemical Depot
Pueblo, Colorado**

CONTAMINATION CONTROL (Annex P Of CAIRA Plan)

1. SITUATION. Same as base plan.

2. PURPOSE. To provide guidance for contamination control while responding to a chemical event, to provide policy for limiting chemical hazards during a CAI, and to define a coordinated response to contain any hazards spills that occur.

3. EXECUTION - HAZARD DETERMINATION

a. During the initial assessment of a CAI, the specific chemicals released and the severity of the hazards must be determined. Chemical agent hazards can be identified either by a visual observation of containers, labels, records, etc., or by analytical methods. Additionally, visual observation should be used to detect releases of other materials, e.g., spills of gasoline, diesel fuel, oil, and decontamination materials used by the operating crew, before leaving the CAI site.

b. Containment of Chemical Agent.

(1) If possible, the point source of the chemical agent hazard should be contained as soon as possible (as long as personnel are not endangered).

(a) The initial response to a CAI is the responsibility of the operating crew at the site, if it is within their capabilities.

(b) In the absence of an operating crew at the site, the Decontamination Team will provide the first response to a CAI, in coordination with the OC and at the direction of the OSIC.

(2) **Remedial Action.** See Below

c. Decontamination Team

(1) The Decontamination Team will be the first to enter the accident site area following

evacuation of any operating crew members, unless there has been an explosion or there is the potential for explosion. In that case, the initial entry party will be an EOD Team.

(2) The Decontamination Team will mitigate the spread of hazards as rapidly as possible using the M12A1 Decontaminating Apparatus, plastic covers, spill pillows, and any other means available, with the goal of preventing hazards from (1) traveling beyond the installation boundary and (2) traveling beyond the confines of the CLA.

(3) The Decontamination Team will remove and containerize contaminated soils and/or solutions, as well as any other materials (PPE, equipment, etc.) resulting from the CAI. This includes not only hazardous materials released during the chemical event itself, but also hazardous materials released during attempts to mitigate the toxic chemical hazard(s) (e.g., decontaminants). Once hazardous materials are containerized, the Decontamination Team will transport the containers with the contaminated materials to the appropriate permitted igloo.

(4) The PCD Environmental Management Office must be notified when wastes are generated, and will perform the appropriate storage and labeling decision-making.

(5) For more detailed information on contamination control reference consult the most **current versions of SOP# PU-0000-M-302**

d. Environmental Representative will:

(1) Provide environmental assistance to assess the extent of contamination and determine estimated impact on public facilities, while assuring compliance with appropriate federal and state regulations.

(2) Identify materials used to concentrate, neutralize, collect, disperse, or remove hazardous substances which may be discharged during response to a CAI.

(3) Maintain a history of all decontaminating solutions or materials used in response to CAI, and advise the IRFC on efforts to use hazardous decontaminating solutions or materials during the removal process.

(4) Upon initiation of a chemical event, make necessary immediate and follow-on environmental reports. Reports will not be dispatched without concurrence with the OC Operations Officer and approval by the IRFC.

4. SERVICE SUPPORT. Same as base plan.

5. COMMAND AND SIGNAL

a. Command. Same as base plan.

b. Signal. Same as base plan.

REMEDIAL ACTION OPERATIONS (Annex R of CAIRA Plan)

1. SITUATION. Same as base plan.

2. PURPOSE. To define and delineate remedial action requirements, following the neutralization and removal of chemical surety material and other hazardous materials released during or subsequent to the chemical event, to return the chemical accident/incident site to technically achievable and acceptable conditions. The CAIRA Recovery Plan (**Appendix B** of this Contingency Plan) is the guidance document for recovery operations.

3. EXECUTION

a. Concept of Operations.

(1) Remedial actions will be conducted only when necessary (e.g., if a long-term assessment and restoration effort is needed). It is important to understand that, so long as any hazardous materials remain in the environment, all attempts and actions to remove them are part of the “removal” phase and not part of remedial actions. Because of the very time-consuming administrative burdens that are part of the remedial action process, it is essential not to declare transition to remedial actions and recovery prematurely – that is, before removal has been completed. Doing so could increase risks to workers and the public by slowing the process of removing remaining hazards. Furthermore, it is possible that complete accomplishment of the removal process will render a remedial action phase unnecessary.

(2) The Remedial Project Manager (RPM), if appointed, is ultimately responsible for all remedial action/restoration operations. The DoD shall appoint an RPM responsible for taking all remedial actions pursuant to the National Contingency Plan (NCP). The RPM must secure and approve funding, approve projected remedial/corrective actions, negotiate with local authorities, submit notifications/reports to regulatory authorities and to the public, gain public involvement, and implement response plans. Additionally, the RPM coordinates, directs and reviews the work of other agencies and contractors to ensure compliance with the NCP, Record of Decision, consent decree administrative order and other agency plans applicable to the response.

(3) Most remedial action operations are not emergency situations that require immediate action. More likely, remedial operations will be long-term operations that could last from several months to several years.

(4) If the RPM is not the PCD Commander, the PCD Commander will cooperate with, and give support to, the RPM as much as possible.

(5) The U.S. Army Corps of Engineers will provide assistance to active Army installations that are conducting chemical agent clean up operations.

4. COORDINATION

The PCD Commander may require technical assistance for remedial activities. This technical assistance may be provided by the United States Army Environmental Center (USAEC) or by contractors.

5. SERVICE SUPPORT

In an effort to comply with all federal, state, and local laws and regulations, cooperation between the military and other government agencies is imperative.

a. All remedial action operations must be consistent with the NCP.

b. Remedial action operations must also be coordinated with other government agencies including the USEPA, the State of Colorado, and local governmental entities.

c. The coordinating agencies will depend upon the classification of the remedial site. A determination will be made as to whether to conduct site restoration as a Response Action under CERCLA, 42 USC 9601 et. seq. or by agreement/permit (e.g., the Resource Conservation and Recovery Act (RCRA) permit). When a chemical release is strictly from a DoD facility, the DoD is the lead agency.

d. During the remedial action process, the PCD Environmental Management Office will maintain communication with the following:

(1) CMA Risk Management and Environmental Office

(2) USEPA

(3) State of Colorado

(4) Pueblo County

e. The Environmental Management Office will advise the PCD Commander of proper procedures and steps to take during remedial action operations to comply with all environmental regulations including CERCLA, the Superfund Authorization and Reauthorization Act (SARA), the RCRA and the NCP.

6. COMMAND AND SIGNAL.

a. Command. Same as base plan.

b. Signal. Same as base plan.

APPENDIX E
(ANNEX Q OF CAIRA PLAN)

Removal Operations

Pueblo Chemical Depot
Pueblo, Colorado

REMOVAL OPERATIONS (Annex Q of CAIRA Plan)

1. SITUATION. Same as base plan.

2. PURPOSE. To identify procedures to remove chemical agent and other hazardous materials resulting from an event involving the discharge of chemical agent to the environment, which may pose potential health threats to people or the environment.

3. EXECUTION

a. The CAIRA Plan provides guidance for overall response to a CAI.

b. Decontamination of the site will be achieved by neutralizing or removing the agent and other hazardous materials involved in the CAI or were used in the response. Detailed decontamination procedures are set forth in the latest revision and change of PCD SOP# PU-0000-M-302, Emergency Response.

c. All requirements of 40 CFR 300 will be fulfilled.

4. COORDINATION. IAW the NCP, the OSC directs response/removal efforts and coordinates all other efforts at the scene of a release. The OSC for a chemical agent release on PCD is the PCD Commander or his designated representative.

5. SERVICE SUPPORT. Same as base plan.

6. COMMAND AND SIGNAL.

a. Command. Same as base plan.

b. Signal. Same as base plan.

APPENDIX F

Evacuation Plan and Map

**Pueblo Chemical Depot
Pueblo, Colorado**

EVACUATION PLAN AND MAP (Annexes E and F of Installation Emergency Management Plan)

1. SITUATION. Same as base plan.

2. PURPOSE. The Annex outlines responsibilities and procedures for evacuating personnel from PCD in the event of a major accident or disaster. It applies to all depot employees, tenants, residents, contractors and visitors.

3. EXECUTION.

a. The responsible PCD Directorate or agency will appoint a Point of Contact (POC) for notifying their contractors working on the depot and providing instructions for evacuations.

(1) During evacuation personnel who notice personnel who appear not to have received the evacuation instructions or who are stranded will inform those individuals and assist them if that is necessary and is safe to do so.

(2) Upon the occurrence of a major accident/incident or disaster where evacuation of PCD personnel is paramount to the safety of personnel, OC Operators will recommend evacuation zones, the evacuation route(s), and assembly points based on the nature of the accident or disaster to the Commander or authorized designee prior to the arrival of the Evacuation Controller in the OC.

(3) Upon receiving the evacuation order, the Command and Control Officer (C2) will accomplish the notifications and announce zones to be evacuated, the evacuation route(s) to be followed, and the Primary Assembly Area where evacuees will congregate. Security will be informed of the Alternate Assembly Area. Furthermore, if the evacuation zones or route(s) must be changed for any reason, the C2 Officer or Operations Officer will use all communication means available to announce this change. Security will then assist in redirecting personnel as much as possible.

(4) The appointed Evacuation Coordinator will report to the OC and assume coordination of all evacuation efforts, to include coordinating needs and status with Security, the Operations Officer, C2 Officer and the Operations Section Chief. If an evacuation has

already been announced, the Evacuation Coordinator will analyze all evacuation instructions that were issued prior to their arrival in the OC and check for errors and oversights, and if necessary take corrective action. The Evacuation Coordinator will make recommendations to the Operations Section Chief if changes in on-going evacuations become needed.

(5) The Evacuation Coordinator will receive reports from the lead Security representative at the assembly area(s) regarding numbers and identities of missing personnel (as furnished by the supervisors present) and coordinate as needed to assist in gaining accountability for all personnel. Accountability information will be reported to the Operations Section Chief.

(6) Throughout the evacuation operation and throughout the entire time that evacuees remain at the assembly point(s) the Evacuation Coordinator will maintain communication with those at the assembly point(s) through the Lead Security Officer present and with the Operations Officer to provide assistance for the injured or ill, to provide cover or liquids if personnel must remain outdoors.

b. Evacuation routing and travel will be conspicuously marked (i.e. signs, symbols, painted on roadway). The zones to be evacuated and the evacuation route(s) to be used (White, Orange and/or Green) will be selected from those shown on the Evacuation Map located in Annex F.

c. The Chief, Operations Section will coordinate with Security to ensure no railroad rolling stock is blocking designated evacuation routes and take necessary steps to remove it if it is or determine and announce a change in the evacuation route.

d. Security will ensure that all gates on the evacuation route(s) are opened *immediately*. Security will determine whether open gates requiring manning or not.

e. Evacuees will use whatever vehicles are available. In order to avoid impeding the evacuation, normal car pools vehicles will not wait for car pool members. Supervisors are responsible for ensuring all personnel at any multi-person site are evacuated. Therefore, the supervisor and his/her vehicle will evacuate the site last. Safe driving practices will be strictly adhered to. Two-way radios and cell phones will be used in vehicles in case of emergency (e.g. accident, injury,

vehicle breakdown).

f. If evacuation is taking place during a Chemical Accident/Incident involving surety or non-surety material, vehicle windows will shut and air conditioning/heater fans turned off until reaching the designated assembly areas.

g. Upon arrival at the designated assembly area, supervisors will ensure that their evacuated personnel have actually arrived safely. Accountability results will be reported to the lead Security representative at the assembly area.

h. Supervisors are responsible for identifying employees who may have special needs during evacuations and planning for them.

i. Supervisors are responsible for ensuring that workers understand in which evacuation zone they are working.

j. Upon the evacuation order, responsible supervisors will determine as rapidly as possible if anyone is unaccounted for and report the individual's name and last known location immediately to the OC. This information will be provided to the Operations Section Chief, Evacuation Coordinator, and Security which will conduct a search. Security will sweep the old ammunition area and make certain it is evacuated. Security will try to convince any persons who refuse to evacuate to do so; non-deadly force will be used to forcibly evacuate personnel only as a last resort.

k. Evacuation of the Chemical Limited Area (CLA) is recommended in most cases upon a Chemical Agent release or explosion.

(1) At the onset of a CAI, all personnel in the CLA (except Security) will immediately don their protective mask and evacuate in the direction recommended. Security personnel will don their masks and follow their written procedures.

(2) Tenants, contractors, visitors and transients who are located in or near the CLA will immediately evacuate as directed by Security, their supervisor, and/or escort personnel upon notification of CAI. Where supervisors or escorts are not present, instructions

broadcast following siren activation will be followed.

(3) Supervisors will report accountability to the Operations Section Chief as soon as it is known.

l. Evacuation of Tenants, Contractors and Visitors (other than those in the CLA and at PCAPP).

(1) Sponsors of unescorted visitors and transients will obtain cell phone information from those personnel for contact while on-post (if available). Sponsors are responsible for identifying persons who may special needs during evacuation and planning for them. Sponsors will, upon occurrence of a major accident or disaster immediately notify the Logistic Manager in the OC of unescorted visitors and transients on PCD and their likely whereabouts (with cell phone numbers). The Logistic Manager will notify all tenants, contractors and visitors of the determined PAD (if CAI) and evacuation instructions and report any problems or discrepancies to the Operations Section Chief and the Evacuation Coordinator. Those notified to evacuate will follow the designated evacuation route(s).

(2) Contractor and tenant supervisors are responsible for ensuring that workers understand in which evacuation zone they are working. Sponsors are responsible for ensuring that unescorted visitors understand in which evacuation zone they are visiting.

m. For the evacuation of PCAPP, the evacuation order and evacuation route instructions will be communicated by phone and/or the PCAPP Communication Center. PCAPP site workers will be further notified via the PCAPP controlled radio and PA systems. All personnel who are part of PCAPP will follow their internal procedures as identified in the *PCAPP Construction Phase Emergency Response and Contingency Plan*. However, evacuating PCAPP personnel will obey instructions from PCD officials (e.g. Security personnel).

n. Evacuation Assembly Areas.

(1) The primary assembly area will be announced from the OC along with the evacuation route(s).

(2) Security personnel will take charge of the assembly area(s). Security personnel will stop all personnel at the checkpoints indicated on the Evacuation Routes Map and determine from what zones they came and which evacuation route they used. If it is suspected that personnel were exposed to airborne hazard (e.g. used incorrect evacuation route), they will be diverted to the Alternate Assembly Area, where vehicles will be parked, and the personnel will report directly to the PCD Clinic for assessment/surveillance before being released.

(3) One Supervisor from each Section or Division at the Primary Assembly Point will account for all of their personnel when they report to the Primary Assembly Area and report this information to the lead Security representative present. He/She will report this information to the Evacuation Coordinator for use to ensure that all personnel are accounted for or coordinate a search for missing personnel. (Note: If personnel appear to be missing, the Evacuation Coordinator will check first with the clinic to ascertain if missing personnel are there).

(4) The PCAPP Emergency Manager or Alternate Evacuation Coordinator will make contact with the Operations Officer in the PCD OC. The Operations Officer will provide evacuation route information and what depot gates are open to facilitate evacuation off the depot. Once instructions are given the PCAPP Emergency Manager will call back to the OC to verify instructions given. If there is any confusion between information provided by the onsite security representative and the OC, the information provided by the OC will be the instructions to be followed.

(5) The PCAPP Emergency Manager is responsible for ensuring that all PCAPP personnel who evacuate to the assembly area to include Building 6 are made fully aware of the situation and planned evacuation routes and gates to be used.

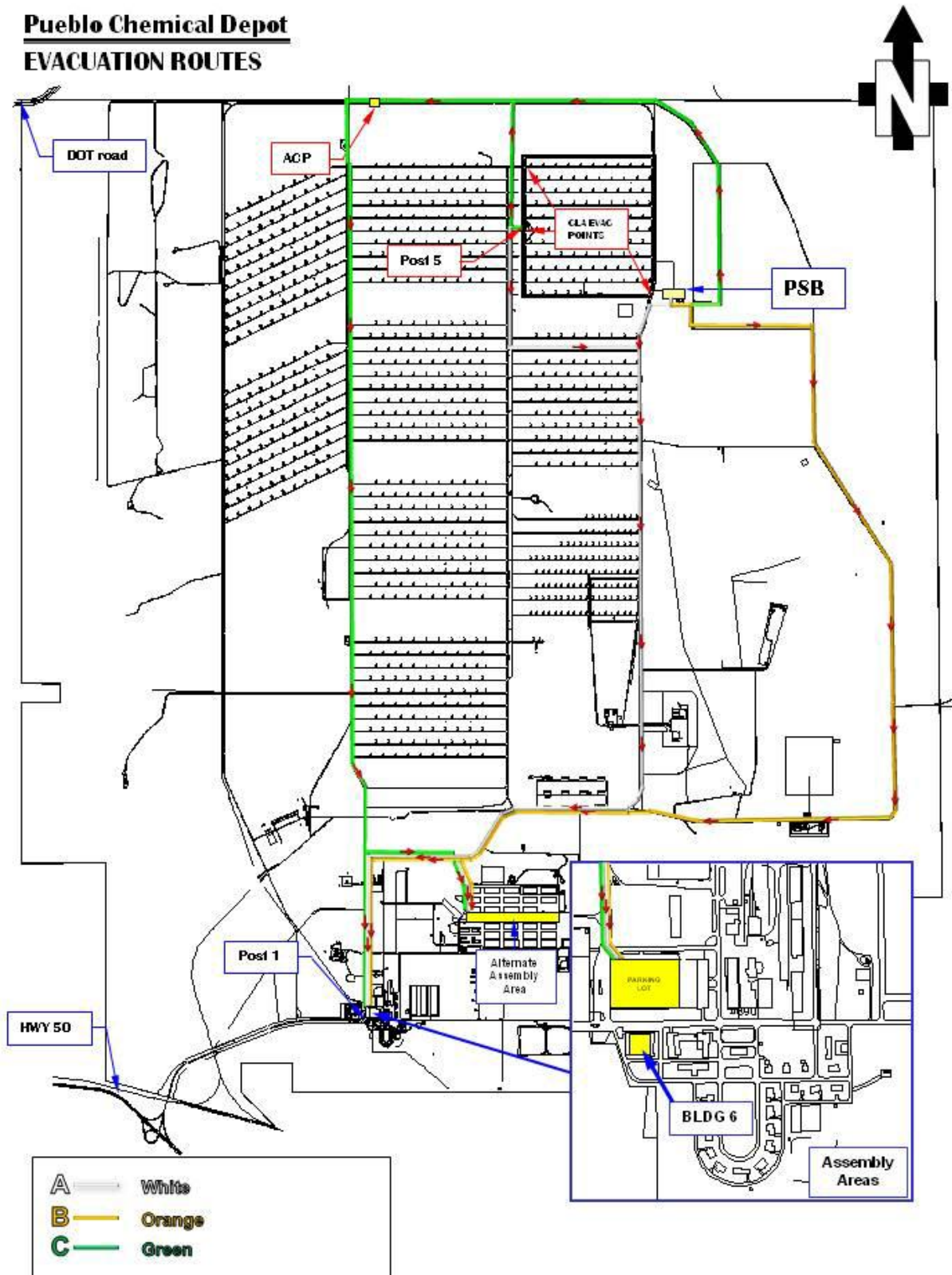
o. Prior to evacuation to off post areas for any reason, notification will be made through the Off-Post Liaison Officer who is located in the Pueblo County EOC to local off-post authorities. The PCD OC will maintain communication through the Off-Post Liaison with the off-post authorities regarding evacuation of depot personnel in particular how the evacuation of depot personnel will affect the Protection Action Decisions (PAD) made by the county EOC. Exit routes from PCD will be coordinated with the Pueblo County EOC.

4. COMMAND AND SIGNAL.

a. **Command.** Same as base plan.

b. **Signal.** Same as base plan.

Pueblo Chemical Depot **EVACUATION ROUTES**



PCD Evacuation Plan-2010_routes.ppt